

Geoanalysis of HIV Prevention Services Provided by CDC-Funded Community-Based Organizations (CBOs)

FINAL REPORT

Prepared for:

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May 31, 2002

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Executive Summary

Title: Geoanalysis of HIV Prevention Services Provided by CDC-Funded Community-Based Organizations (CBOs)

Contract No: 282-98-0022, Task 10

Sponsor: Centers for Disease Control and Prevention
Office of Program Planning and Evaluation
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Objectives

The primary objective of this study was to construct a national, georeferenced database of HIV prevention services provided by CDC-funded community-based organizations (CBOs). This database was created to provide information about CBO locations, HIV prevention services provided, and geographic service areas of prevention programs. An additional objective was to pilot the use of geographic information system (GIS) technology to examine the geographic distribution of CBO-provided HIV prevention services and identify potential gaps in service provision.

Data Collection and Development

RTI conducted a mail survey of all HIV prevention service providers funded by CDC during fiscal year 2000. Service providers included those funded directly by CDC and those funded indirectly through state or local health departments. While most HIV prevention service providers were CBOs, in some cases, state and local health departments were respondents, describing services that they provided themselves rather than through contracts with CBOs. Respondents were asked to describe the location, intervention, population served, and service area for each of their CDC-funded interventions.

Items for the survey instrument were developed by the RTI study team, with input from the CDC Project Officer and other CDC staff. The survey instrument was pretested in Raleigh and Durham, NC and a pilot test was conducted in San Diego among HIV prevention providers in six CBOs. To maximize compatibility of survey data with other current and planned CDC data collection efforts, response categories were consistent with that of CDC's *Evaluation Guidance*. The survey instrument consisted of six questions that obtained information about intervention type, risk population, race/ethnicity of

populations served, funding source, geographic units comprising the service area, and the geographic distance within which the majority of persons served were located.

Surveys were mailed in July 2000 to a universe of 1562 CBOs. During the data collection process, a number of CBO records in the database were identified as duplicates or ineligible (e.g., a CBO that did not provide HIV prevention services in fiscal year 2000), and the resulting survey population was 1,450 CBOs. Of these, 98 were directly funded by CDC; 1,263 were indirectly funded through a state or local health department, and 89 CBOs received both direct and indirect funds.

RTI used a number of follow-up measures to ensure a high survey response rate, including postcard reminders, two waves of telephone prompting, follow-up letters from CDC, and two additional mailouts of survey packages to nonrespondents. The use of these follow-up measures yielded an overall response rate of 70 percent, after removal of duplicate entries and ineligible respondents from the survey population. A total of 1,020 CBOs responded to the survey. These CBOs reported on a total of 3,028 HIV prevention programs.

Data from the survey were coded, double-entered and converted to a Microsoft Access 2000 database. Tables in this database were then linked with map layers in a geographic information system to provide spatial information about HIV prevention services. This information included the point locations of CBO and program addresses, and polygons that represented the service areas of HIV prevention programs. Data development activities resulted in the HIV Prevention Services Database, an ArcView (Environmental Systems Research Institute, Redlands, CA) GIS application that contains all of the survey data and map layers needed for mapping and analysis.

Mapping and Analysis

RTI carried out a preliminary analysis of the HIV prevention services data at the national scale. The primary purpose of this analysis was to describe general patterns of CBO and service area distribution and to demonstrate the potential of GIS to perform data queries and examine geographic patterns of service provision. A second objective was to utilize two common measures of spatial distribution – the location quotient and coefficient of localization – to provide an understanding of how CBOs were distributed in relation to underlying populations. These measures indicated that while the nationwide geographic distribution of CBOs, on the whole, is not extremely localized or uneven, there are states that have less than their “expected share” of CBOs, based on general population distribution and the distribution of two subpopulations – African Americans and persons living with AIDS.

The preliminary analysis also included service area mapping and brief descriptions of the results of a series of univariate queries that were made on intervention type, risk population and race/ethnicity served. While many interesting patterns – some expected, some not – were revealed, the service areas of the 430 CBOs that did not respond to the survey could not be shown. Thus, any analysis of service area data must be interpreted with caution due to response bias.

RTI also demonstrated the potential of integrating GIS technology with gap analysis, a methodology that is often used to assess the need of specific populations for HIV prevention services. Borrowing from GIS techniques used in ecological gap analysis, RTI identified the following steps for carrying out geographic gap analysis in a health services context:

1. Map the “unmet” need for services for a given target population. This step may require cartographic modeling of certain population distributions and known risk factors.
2. Map the geographic service areas of programs that provide services to specified target population.
3. Use GIS overlay analysis to intersect the maps of unmet need and existing service areas.

RTI was able to demonstrate the use of these methods in a Florida case study, because the Florida HIV/AIDS Community Planning Group has conducted and published a comprehensive needs assessment that has identified priority target groups for specific geographic regions of the state. Data from the *State of Florida 2001–2003 HIV/AIDS Prevention Plan* were combined with CBO-provided HIV prevention services data collected during this project to examine potential gaps in services in the state of Florida.

Conclusions and Recommendations

The primary result of this project is a dynamic, spatially enabled database, the HIV Prevention Services Database, that will provide CDC with a wealth of information about HIV prevention services, with large potential for geographic modeling, analyses, and mapping. Data include the location and contact information for all 1,450 CBOs deemed eligible to participate in the survey, and survey response information for the 1,020 CBOs that responded. HIV prevention program data are available for 3,028 programs. The analysis carried out by RTI is by no means exhaustive. Instead, it demonstrates the potential of using GIS technology to 1) better understand spatial patterns of prevention service delivery, and 2) provide important information for program administration and decision-making.

The program data collected for this project were for prevention services provided during fiscal year 2000. RTI strongly recommends that the HIV Prevention Services Database be updated and maintained on an ongoing basis. Furthermore, RTI recommends that future data collection efforts use Web-based survey methodologies. These methodologies are being used increasingly in health, social sciences, and educational research.

RTI also recommends that CDC conduct more extensive analyses of the HIV Prevention Services Database to develop a better understanding of the geographic coverage of HIV prevention. One type of analysis that was not carried out by RTI is that of identifying areas where services may be duplicated. This would be done by identifying geographic overlaps in services with the same combinations of intervention type, risk population, and major race/ethnicity.

Finally, RTI recognizes the benefit of working with the various state community planning groups specifically to carry out geographic analyses. These groups have access to community indicators and HIV/AIDS data that might not be accessible to CDC. Florida’s priority ranking methodology is well suited for geographic analysis and demonstrates the potential of a geographic health services gap analysis.

Introduction

1.1 Purpose

The Centers for Disease Control and Prevention (CDC) is among the nation's leading sources of funding for programs to prevent the spread of human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS). Yet CDC has limited information on the geographic distribution of services that it supports and the extent to which funded services are accessible to the populations at greatest risk of contracting HIV/AIDS. Geographic information system (GIS) technology offers a potentially powerful means of addressing such questions by organizing and analyzing information about services and populations in relation to their geographic location.

This report presents the findings of a study designed to improve the information available to program planners on the distribution of CDC-funded HIV prevention services. The study, conducted by Research Triangle Institute (RTI), used data from a survey of CDC-funded HIV prevention programs as the basis for a multilevel analysis of program locations and service areas. The purposes of the study are to

- | Construct a geocoded national database to identify, locate, and map all HIV prevention activities funded by CDC, either directly or indirectly through cooperative agreements with state or local health departments;
- | Analyze service area data in relation to demographic and epidemiological characteristics; and
- | Evaluate the utility of GIS technology as an analytic tool for assessing the comprehensiveness of HIV prevention services within geographic areas.

1.2 The Need for Information on HIV Prevention Services

With advances in treatment over the past two decades, more people are living with HIV/AIDS than ever before (CDC, 2001a). Greater longevity for infected persons has important implications for prevention. The public perception that effective treatment exists can reduce incentives for preventive practices by uninfected individuals. Therefore, prevention activities continue to be essential even as advances are made in the treatment of this disease.

The CDC commissioned the Institute of Medicine (IOM) to devise a framework for a national HIV prevention strategy, which is summarized in the report, *No Time to Lose: Getting More from HIV Prevention* (Ruiz et al., 2001). The IOM report calls for a national strategy focused on better tracking of the disease and on funding the most cost-effective HIV prevention programs. In response to the charge for better tracking, the CDC is now working to improve surveillance efforts by designing geographically

enabled systems for data analysis. Similar information is needed in order to ensure that prevention programming responds to those populations at greatest risk.

At both the federal and state levels, policy makers and program managers need information on the location and coverage of HIV prevention programs in order to assess the extent to which they meet the needs of persons at risk. The questions they must answer are simple, yet essential: “Where are services being provided, and where are they lacking?” “Which kinds of services are available, and which are not?” and “Which populations are receiving services, and which are not?”

Program monitoring data currently being collected provide valuable information about the types of services provided and characteristics of persons served. The reporting framework established by CDC’s *Evaluation Guidance* (CDC, 2001b) provides CDC-funded providers with a common vocabulary for interventions and target populations. Yet these data provide limited information about whether services are accessible to their intended recipients.

Information is needed at the national, state, and local levels. At the national level, CDC’s funding mechanism makes it particularly difficult to monitor distribution of the services funded by the agency. CDC has two principal mechanisms for funding HIV prevention services. The agency makes grants directly to a limited number of community-based organizations (CBOs) and through cooperative agreements with state and local health departments, which fund CBOs selected with guidance from community planning groups. CDC has little information about the location of indirectly funded CBOs. Additionally, CDC lacks information on the geographic areas served by these programs, whether directly or indirectly funded.

1.3 Using Geographic Information Systems to Understand Service Delivery

A GIS is an information management system that contains geographically referenced data. The types of information entered into a GIS depend on its purpose but could include environmental, demographic, or health data, among others. Each record in the GIS is linked to geographic coordinates (latitude and longitude) on a map, which represent a point, line, or polygon. Polygons may correspond to geopolitical units, such as cities or states, or may describe the geographic shape of such diverse entities as a watershed, a media market, or a school district. In this type of study, polygons could represent population and service phenomena, such as a health center catchment area, a neighborhood where drug users congregate, or areas with specific racial or ethnic populations.

The GIS’s mapping capability allows presentation of complex information in a readily understood picture. Even simple maps can suggest variations in epidemiology or access for discussion and investigation. Data stored in a GIS can be output as a map to show, for example, the number of CBOs conducting HIV testing.

The unique power of GIS technology, however, lies in its ability to present data representing varied phenomena by compiling them as layers on a single map. Geography thus becomes the common denominator for disparate data types. Mapping the location of test sites in relation to HIV incidence, for example, could graphically demonstrate possible gaps in service availability and suggest priorities for

locating new test sites. Because maps make complex data more accessible to both experts and nonexperts, they can facilitate discussion about issues of access and service needs.

In addition to displaying information in maps, GIS technology can also support spatial analysis and modeling functions. Techniques include buffer zone analysis that can estimate the number of persons living within a specified distance of a resource (such as a test site), or the distribution of HIV prevention services in relation to the number of persons living with AIDS.

GIS is increasingly used in public health and health services research. Recent examples include studies of variations in screening and surgical procedures in relation to health care resources (Goodman and Wennberg, 1999), the extent to which a community health center was meeting the needs of an underserved population (Phillips et al., 2000), and gaps in childhood immunization coverage in relation to resource needs (Weigle et al., 1998). Several barriers limit its wider application, however, including the quality of address information in existing administrative data, the difficulty of geocoding local public health information, system incompatibilities, confidentiality concerns, and the high cost of necessary training and software (Yasnoff and Sondik, 1999).

1.4 The Geoanalysis of HIV Prevention Services Study

The CDC has made a commitment to “utilizing new technologies to provide credible health information” (<http://www.cdc.gov/newtech.htm>). GIS technology represents a potentially valuable resource that can improve the usefulness of information and facilitate its sharing. Use of GIS could support service planning that responds to population needs; create data resources for use by state health departments, CBOs, and the CDC; and integrate with other data collection activities currently underway at CDC. CDC initiated this study to assess the potential usefulness of GIS in planning HIV prevention services. The study activities and findings are summarized in this report.

Section 2 of this report describes the planning and implementation of the national survey of CBOs that provided data for this study. Section 3 discusses the design and development of the georeferenced database. Sections 4 and 5 present examples of the analyses possible with this database, both at the national and state levels. Section 6 summarizes the capabilities of the HIV Prevention Services Database, evaluates data collection methodologies, and provides recommendations for future research. Throughout this report, many references are made to the database developed for the report—the HIV Prevention Services Database.

A large number of maps have been created for spatial analysis and display of geographic data. These are contained in a separate document, the *Atlas of CDC-Funded, CBO-Provided HIV Prevention Services* (referred to hereafter as the *Prevention Services Atlas*). Many of these maps have also been inserted, in smaller size, into the main body of this report, to accompany discussions of patterns and geographic distributions. An effort has been made to use patterns and symbols that are discernible in black and white; however, the reader may need to refer to the *Prevention Services Atlas* for a more thorough interpretation of patterns.

The HIV Prevention Service Area Survey

2.1 Overview

RTI conducted a survey of all HIV prevention service providers funded by CDC during fiscal year 2000. Service providers included those funded directly by CDC and those funded indirectly through cooperative agreements with state or local health departments. While most HIV prevention service providers were CBOs, in some cases, state and local health departments were respondents, describing services that they provided themselves rather than through contracts with CBOs. Respondents were asked to describe the location, intervention, population served, and service area for each of their CDC-funded interventions.

2.2 Survey Development

Items for the survey instrument were developed by the RTI study team, with input from the CDC Project Officer and other CDC staff. Three general types of data were of interest:

- | Descriptions of prevention interventions,
- | Descriptions of persons served by the intervention, and
- | Specification of the location of service delivery and the geographic area in which persons served live.

The study team pretested a draft questionnaire with HIV prevention providers in Raleigh and Durham, NC. Following revisions suggested by the pretest, a pilot test was conducted in San Diego. HIV prevention program managers in six CBOs completed the questionnaire and then participated in debriefing interviews in which they described how they interpreted questions and chose responses and discussed any difficulties they encountered with the instrument. Other revisions were suggested during an expert panel meeting convened at CDC to discuss the survey instrument, database design issues, and analysis.¹ The final survey instrument is included as Appendix A.

2.2.1 Describing Interventions and Persons Served

To maximize compatibility of survey data with other current and planned CDC data collection efforts, response categories were consistent with that of CDC's *Evaluation Guidance* (CDC, 2001b).

¹ Members of the expert panel were Bruce Mesh, Bamaware Corporation; Gerard Rushton, University of Iowa; William Wheaton, RTI; and James Wilson, NC State Center for Health Statistics.

Using response options shown in the box below, the following types of data were collected for each prevention program:

- | *Intervention type.* Pilot test respondents were comfortable with these categories and had no difficulty choosing among them. Because many prevention programs employ multiple types of activities, multiple responses were allowed.
- | *Risk population.* Because prevention program planners often think in terms of risk behaviors and demographics rather than transmission route, these categories were problematic in both the pilot test and survey. Although multiple responses were allowed for this item, many respondents felt that the categories did not adequately represent the populations they served, such as teen sex workers or poly-drug users. Given the overriding value placed on consistency with other data collection efforts, however, the *Evaluation Guidance* response categories were retained.
- | *Race and ethnicity.* Because multiple responses were allowed for each item, categories for race and ethnicity could be combined without loss of precision.
- | *Funding source.* Respondents were asked whether prevention programs were funded directly by CDC, indirectly through a state or local health department, or both. Although this information was available from CDC and health department data at the CBO level, it was included on the survey instrument to see whether funding sources for specific prevention programs could be identified when respondents received both types of funds.

Response Categories for Interventions and Persons Served

Intervention Type

- Individual-level interventions
- Group-level interventions
- Street and community outreach
- Prevention case management
- Community-level interventions
- Health communications/public information
- Counseling, testing, referral, and partner notification

Risk Populations

- Men who have sex with men (MSM)
- MSM/intravenous drug users (IDU) (and other drug users)
- IDU
- Heterosexual
- Mother with/at risk for HIV
- General public

Race and Ethnicity

- African American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Hispanic or Latino
- White
- More than one race*
- Race unknown

*This option refers only to individuals of more than one race/ethnicity. For populations, respondents used the racial/ethnic categories that best describe the persons within the population.

2.2.2 Describing Service Area

Data describing intervention types and persons served, combined with the address of responding CBOs, would by itself yield valuable information about the locations of services being provided with CDC funds for specific populations. However, the intent of this study was to describe service area as well as service location. Service areas can be described in several ways, each of which has ramifications in terms of analyses that can be supported and data collection issues (Simpson et al., 1994):

- | *Patient origin.* Service area is defined by compiling actual addresses for persons served. Although this approach provides very precise data, it also involves concerns about respondent burden, confidentiality, and data quality. Many HIV prevention programs do not collect address information; consequently, this approach was not feasible.
- | *Geographic distance.* Service area is defined by the maximum distance from which persons served come to the service. Distance measures are relatively simple in terms of data collection and management. However, because service areas rarely correspond to circular areas described by distance measures, the resulting data can be of relatively poor quality.
- | *Geopolitical boundaries.* Service area is defined by naming the states, counties, cities, or ZIP codes in which services are provided. These units are familiar to most persons and may already be used by respondents in planning and describing their activities. However, geopolitical units may not correspond to service areas that are defined in terms of neighborhoods, and they are sometimes imprecise, such as when a city boundary spans county lines.

Based on discussions among the project team and findings from the pilot test, it was decided to collect service area data in terms of both geographic distance measures and geopolitical units. Having both types of data makes it possible to compare the two types in terms of data management and analysis and provides a means of assessing data quality.

Respondents were given a cascading set of geopolitical unit responses, from which they could name multiple responses at one or more levels of specificity, i.e., multiple counties or a county with additional cities. Response options for distance included six choices ranging from less than 5 miles to more than 25 miles (see box at right).

Service Area Response Options

Geopolitical Description Options

- | An entire state or territory, or multiple states or territories
- | An entire county or island, or multiple counties or islands, but an area smaller than an entire state or territory
- | An entire city/town or multiple cities/towns, but an area smaller than an entire county
- | An area smaller than an entire city/town (i.e., ZIP code)
- | Tribal lands

Distance Specification

- | Six distance measures, ranging from less than 5 miles to greater than 25 miles, within which the majority of persons served live.

Service area was defined in terms of the location of persons actually served. This may differ from the target area, for which services were planned. The location of persons served was therefore chosen as the more precise representation of coverage for CDC-funded services. The question was phrased in terms of where persons served live, although respondents were not asked to consult actual address records in choosing their response. For street and community outreach activities, respondents were instructed to describe the area in which the intervention took place because these activities may be directed at transient populations or persons who congregate in a specific area without necessarily living there.

A final modification of the wording on service area items was to specify it as “the area where the majority (roughly 80%) of people receiving this prevention program live,” or, for street and community outreach, “where the majority of activities took place.” This wording was intended to avoid responses

that were skewed toward large service areas by a small number of service users or activities outside the usual service area. In the pilot test, this wording was found to elicit responses that more closely represented actual activities.

2.2.3 Structure of Survey Instrument

The survey instrument included several features designed to support the quality of the resulting data. These included the use of multiple response forms for describing prevention programs, inclusion of a respondent-specific reference map in the survey package, provision of a booklet with definitions of terminology used in questionnaire items, and availability of telephone support from project staff.

Multiple response forms. Spatial analysis requires data that represent unique combinations of services provided, populations served, service location, and service area. Based on pilot test findings, the “prevention program” was used as a proxy for this construct. The survey instrument used the existing CDC definition of an HIV prevention program as “a set of interventions provided to a specific population in a geographic service location.” Respondents were asked to use as many response forms as necessary to provide information for each of their prevention programs. The questionnaire package included 10 response forms, with more available, if needed. Most respondents used fewer, as shown in Figure 4-10.

Reference map. Each questionnaire package included a one-page color reference map created for that CBO, as shown in the example in Appendix B. The map showed two views of the area surrounding the CBO’s location: one identifying cities, counties, and major roads within a 30-mile radius, the other showing a zoomed-in view of ZIP codes and towns within a 5-mile radius. In both views, concentric circles at set distances were used to provide a spatial frame of reference. Inclusion of the maps was based on the pilot test, in which respondents completed service area items twice: first without a reference map, and then with it. Using a reference map improved data quality in several ways:

- | *Completeness.* Respondents named more cities served when looking at a map that included names of all cities in the county.
- | *Accuracy.* Estimates of distance from the CBO location were more accurate when respondents consulted a map showing distance in 5-mile increments.
- | *Precision.* Respondents described service areas in terms of specific ZIP codes within the city rather than the entire city when using a map showing ZIP code boundaries.

Definition booklet. Each questionnaire package included a four-page insert providing definitions of intervention types and risk population categories used in the survey items. Although these are standard definitions for reporting on CDC-funded programs, providing them with the survey instrument offered additional support for response accuracy. The booklet also included one page of graphic examples of service areas, depicting several combinations of counties, cities, and ZIP codes, as well as distance from the CBO location.

Telephone support. The survey package included names and toll-free phone numbers of project team members so respondents could request additional response forms or modifications to their reference map, or discuss questions about how to complete the survey. Telephone support was used extensively. Beyond the typical survey operation questions, the issues of most concern included

- | When respondents should complete multiple response forms rather than using multiple responses to questionnaire items,
- | How to identify the service location for interventions delivered at multiple locations (such as group-level interventions),
- | Concern that the response categories offered for risk populations did not fit well to behavioral definitions used in program planning.

2.3 Survey Administration

Surveys were mailed in July 2000. Initially, surveys were mailed to the database of 1,531 directly and indirectly funded CBOs provided by CDC. CBOs were added to this initial database as contacts were made and additional CBOs were identified, with a resulting universe of 1,562 CBOs. All survey data, actions, and responses were maintained in a Microsoft Access control system that was designed specifically for this project.

A number of CBO records in the database were identified as duplicates or ineligible (e.g., a CBO that did not provide HIV prevention services in fiscal year 2000), with a resulting survey population of 1,450 CBOs, as shown in Table 2-1.

Table 2-1. CBO Eligibility Status

Status	Number of CBOs
Duplicate	44
Ineligible	65
Refusal	3
Responded	1,020
Did not respond	430
Total	1,562

Within the survey population of 1,450 CBOs and health departments,

- | 98 were directly funded by CDC,
- | 1,263 were indirectly funded through a state or local health department, and
- | 89 CBOs received both direct and indirect funds.

Extensive follow-up included the following activities:

- | A postcard thanking respondents who had already returned their questionnaire and reminding others to do so;
- | Two waves of telephone prompting;

- | Follow-up letters from CDC;
- | Two additional mailouts of survey packages to nonrespondents.
- | A final thank you postcard to respondents.

2.3.1 Response Rate

The follow-up measures listed above yielded an overall response rate of 70 percent, after removal of duplicate entries and ineligible respondents from the survey population. Response rate was slightly higher among directly funded CBOs (79%) than indirectly funded CBOs (70%) (see Table 2-2). However, CBOs receiving both types of funding had a lower response rate than either of these two groups (63%). As shown in Section 4.1.4, these response rates are inversely correlated with the average number of programs per CBO. The response status of each of the original 1562 CBOs in the universe is indicated on the list in Appendix C.

Table 2-2. CBO Response Rates by Funding Source

Funding Source	Number of CBOs	Number Responded	% Responded
Direct	98	77	78.6
Indirect	1,263	887	70.2
Both	89	56	62.9
TOTAL	1,450	1,020	70.3

Figure 2-1 shows the response status of each of the 1450 CBOs in the survey population. Triangles represent CBOs that did not respond. Particularly notable are the number of nonresponses in Illinois and Montana. Montana CBOs were identified late in the data collection process and may not have had enough time to return surveys before that phase of the project ended. In Illinois, the State Health Department acted as an intermediary for the survey and the lack of direct contact for follow-up is likely to have reduced response rates. In this map, nonresponses are drawn over responses, which accounts for the pattern present in many of the northeastern cities.

Response rates varied substantially among both states and metro areas, as shown in Tables 2-3 and 2-4 and Figure 2-2. In the majority of states, 60 to 80 percent of CBOs responded. Higher response rates occurred in some of the Plains states, Utah, the upper Midwest, and pockets of the Southeast and Northeast. Eight states/territories had response rates less than or equal to 50%.

Response rates are particularly unstable for areas with few CBOs, where responses from just one or two CBOs may dramatically influence the response rate. In viewing maps and analyses in subsequent sections of this report, it is important to keep in mind the influence of missing responses

Figure 2-1. CBO Response to HIV Prevention Service Area Survey



Table 2-3. Survey Response Rates by State

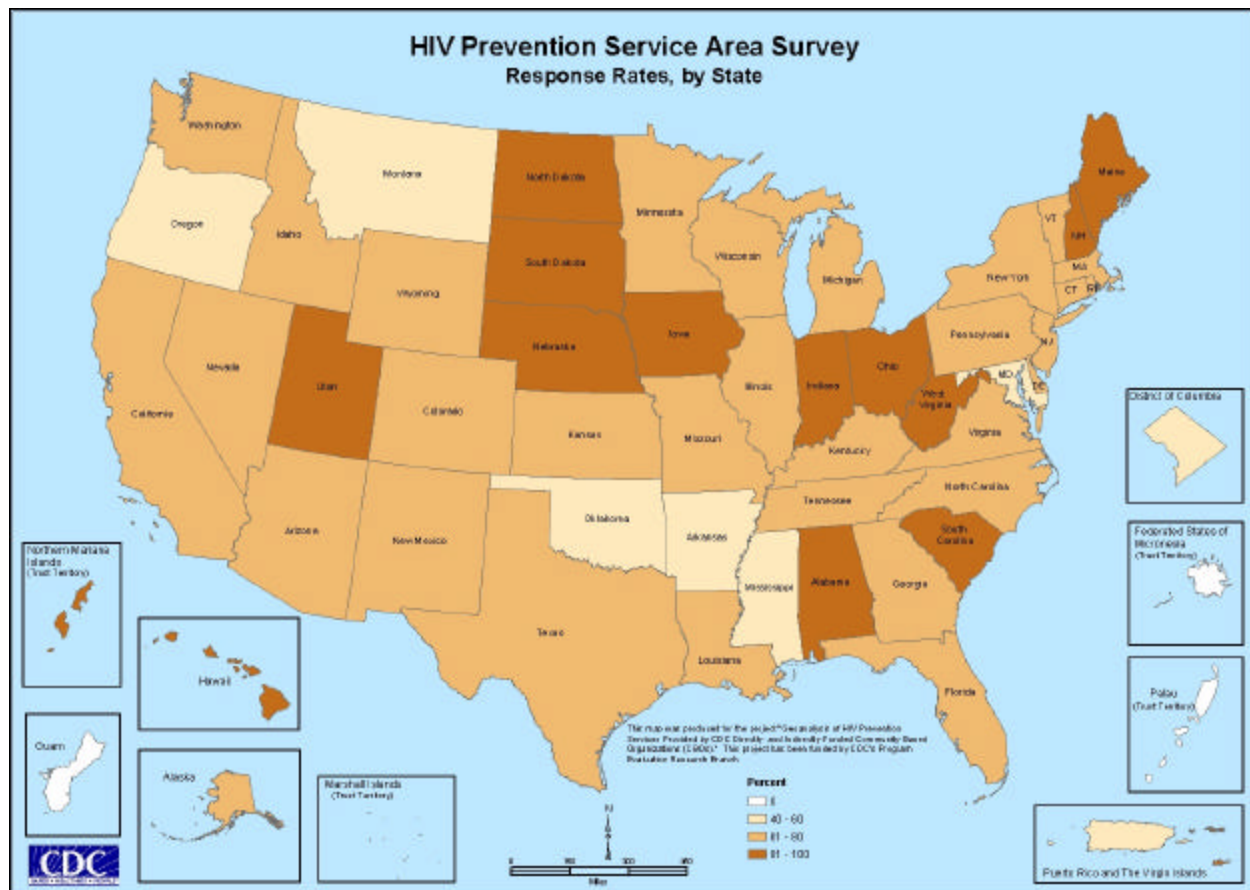
State	Number of CBOs	Number of Responses	Response Rate (%)
Alabama	13	11	84.6
Alaska	9	6	66.7
Arizona	10	8	80
Arkansas	9	5	55.6
California	130	92	70.8
Colorado	28	22	78.6
Connecticut	36	26	72.2
Delaware	15	10	66.7
District of Columbia	17	7	41.2
Fed States of Micronesia	1	0	0
Florida	39	29	74.4
Georgia	20	15	75
Guam	1	0	0
Hawaii	6	6	100
Idaho	10	7	70
Illinois	127	79	62.2
Indiana	23	19	82.6
Iowa	9	8	88.9
Kansas	30	24	80
Kentucky	5	4	80
Louisiana	25	16	64
Maine	16	14	87.5
Maryland	42	21	50
Massachusetts	38	26	64
Michigan	48	35	72.9
Minnesota	25	18	72
Mississippi	13	7	53.8
Missouri	18	11	61.1
Montana	24	12	50

State	Number of CBOs	Number of Responses	Response Rate (%)
Nebraska	16	14	87.5
Nevada	8	6	75
New Hampshire	1	1	100
New Jersey	41	30	73.2
New Mexico	16	12	75
New York	124	86	69.4
North Carolina	27	20	74.1
North Dakota	19	16	84.2
Northern Mariana Islands	1	1	100
Ohio	50	42	84
Oklahoma	8	4	50
Oregon	14	7	50
Palau	1	0	0
Pennsylvania	32	22	68.8
Puerto Rico	12	7	58.3
Rhode Island	12	8	66.7
South Carolina	12	10	83.3
South Dakota	2	2	100
Tennessee	18	14	77.8
Texas	88	64	72.7
Utah	12	10	83.3
Vermont	20	15	75
Virgin Islands (U.S.)	4	4	100
Virginia	43	27	62.8
Washington	45	33	73.3
West Virginia	10	9	90
Wisconsin	18	12	66.7
Wyoming	9	6	66.7

Table 2-4. Survey Response Rates for Cities with a Population of More Than 500,000

City	State	Number of CBOs	Number of Responses	Response Rate (%)
Austin	TX	3	1	33.3
Baltimore	MD	22	9	40.9
Boston	MA	10	7	70
Charlotte	NC	3	1	33.3
Chicago	IL	27	18	66.7
Columbus	OH	5	4	80
Dallas	TX	7	4	57.1
Denver	CO	12	9	75
Detroit	MI	14	9	64.3
El Paso	TX	2	2	100
Fort Worth	TX	3	2	66.7
Houston	TX	29	20	69
Indianapolis	IN	11	7	36.6
Jacksonville	FL	3	3	100
Los Angeles	CA	18	13	72.2
Memphis	TN	5	4	80
Milwaukee	WI	9	5	55.6
Nashville	TN	8	7	87.5
New York	NY	51	27	52.9
Oklahoma City	OK	3	2	66.7
Philadelphia	PA	21	14	66.7
Phoenix	AZ	6	5	83.3
Portland	OR	6	6	100
San Antonio	TX	8	6	75
San Diego	CA	6	5	83.3
San Francisco	CA	27	19	70.4
San Jose	CA	5	3	60
Seattle	WA	9	7	77.8
Washington	DC	17	7	41.2

Figure 2-2. Response Rates by State



Data Development

This section describes the data entry procedures, database design, and development of geospatial data for the HIV Prevention Services Database, as well as some of the challenges of creating spatial data from survey data. Although some of this information was already discussed in an earlier document, *Database Design for Geographic Service Area Data* (Hanchette et al., 2001), minor changes have since been made and are described herein. This section is fairly technical and not necessary for understanding of the succeeding analytical discussion.

3.1 Data Entry

Survey instruments received from respondents were reviewed for completeness and coded. Surveys with incomplete responses were set aside for callbacks. Both RTI and CDC staff made calls to obtain missing information. Data from Question 5, which asked respondents to provide information about geographic service areas, were assigned geographic Federal Information Processing Standard (FIPS) codes. In the early stages, this geographic coding was done by survey staff; however, it quickly became apparent that RTI's GIS staff could do this coding more efficiently because of their knowledge of geographic codes and underlying geographies and their access to geospatial data for problem solving.

Coded surveys were sent to RTI's data entry staff for processing. A data entry program was written specifically for this project and included verification, cleaning, and other quality control measures. All data were double-entered and verified. Data entry codebooks were included with the original database design document and, consequently, are not part of this report. The results of the data entry process were two large text files, one that contained more general CBO information and one that contained all of the HIV prevention program survey responses.

3.2 Database Design

The text files from data entry were converted to a series of 10 Microsoft Access 2000 tables. These tables were developed to normalize the data (i.e., group them into tables in a formalized procedure to eliminate duplication of information and provide flexibility in table structure for future additions or changes) and to allow linkage to map databases via ArcView GIS software. Brief descriptions of the tables are provided in Table 3-1.

Table 3-1. Access Table Names and Descriptions

Table Name	Description
ADDRESS_SOURCES	Coding table for source of PROG and S_FORM addresses
CBO	Master list of CBOs with geocoded locations
CHECK	Coding table for multiple-response check boxes
DIST_RSP	Coding table for distance response to Question 6
F_TYPES	Coding table for Question 5 geographic area types (i.e., state, county, city, ZIP code, reservation)
FUNDS	Coding table for CDC funding in Question 4
PROG	Prevention program survey responses
S_FORM	CBO information
T_AREA	FIPS codes for geographic areas served (Question 5)
YORN	Coding table for Yes or No responses

The T_AREA table contains the geographic service area responses to Question 5. As described below, these data have been linked to geospatial data by FIPS codes. Data in the F_TYPES table indicate which geographic base map (i.e., state, county, city, ZIP code, or reservation) to link to. The CHECK, DIST_RSP, FUNDS, and YORN tables contain information about codes used by data entry to provide information about the legitimacy or logical consistency of responses to survey questions. Definitions for these codes are included in the data entry codebooks included with the original database design document.

3.2.1 Data Dictionary

The data dictionary is provided over the next several pages and contains the following information for each of the 10 database tables:

- | Table name
- | Description of overall table
- | Field name
- | Data type (Type): Text, Long Integer (whole number), Boolean (yes/no), Double (floating point number)
- | Size (bytes)
- | Description, which begins with survey question number (if applicable) and, for coded or standardized responses, ends with the link to the appropriate coding table.

Figure 3-1. HIV Prevention Service Area Survey Data Dictionary

Table: ADDRESS_SOURCES

Description: Coding table for source of Prog and S_Form addresses

Field Name	Type	Size	Description
AddrSourceID	Long Integer	4	Unique ID for type of address
SourceDescription	Text	50	Description of address source

Table: CBO

Description: Master list of CBOs with geocoded locations

Field Name	Type	Size	Description
CBO_ID	Text	7	Unique ID for CBO
CBO_NAME	Text	250	Name of CBO
LOC_ADDR1	Text	125	First line of location address
LOC_CITY	Text	50	Location city
LOC_ST	Text	5	Location state
LOC_ZIP	Text	15	Location ZIP code
MAIL_ADDR1	Text	125	First line of mailing address
MAIL_CITY	Text	50	City for mailing address
MAIL_ST	Text	5	State for mailing address
MAIL_ZIP	Text	15	ZIP code for mailing address
LAT	Double	8	Location latitude (from geocoding)
LONG	Double	8	Location longitude (from geocoding)
CDCSource	Long Integer	4	Funding source from CDC records
CBOSource	Long Integer	4	Funding source based on CBO-supplied program information, or CDC record if no information supplied by CBO
GDTStat	Text	2	Geocoding status code
Responded	Integer	2	True (i.e., <>0) if CBO responded to survey
BlueForm	Integer	2	True (i.e., <>0) if CBO information form submitted
YellowForms	Long Integer	4	Number of prevention program forms submitted

Table: CHECK

Description: Coding table for multiple check box responses

Field Name	Type	Size	Description
CHECK_ID	Long Integer	4	Unique check box response identifier
DESC	Text	50	Check box response identifier

Table: DIST_RSP

Description: Coding table for distance response to Question 6

Field Name	Type	Size	Description
DIST_ID	Long Integer	4	Unique distance response identifier

Field Name	Type	Size	Description
DESC	Text	50	Distance response identifier description

Table: F_TYPES

Description: Coding table for FIPS area types (e.g., state, county, city, etc.)

Field Name	Type	Size	Description
F_ID	Long Integer	4	FIPS area type identifier
DESC	Text	25	FIPS area type description

Table: FUNDS

Description: Coding table for CDC funding question 4

Field Name	Type	Size	Description
FUND_ID	Long Integer	4	Unique CDC funding identifier
DESC	Text	100	CDC funding description

Table: PROG

Description: Contains prevention program survey information (yellow form)

Field Name	Type	Size	Description
CBO_ID	Text	7	CBO identifier—linked to S_Form
P_NO	Long Integer	4	Program identifier
CBO_PROG	Text	15	CBO and program identifiers combined in character field
P_NAME	Text	100	Program name
ADDR	Text	75	Service location address
CITY	Text	35	Service location city
ST	Text	2	Service location state
ZIP	Text	9	Service location ZIP code
Q1_1	Long Integer	4	Question 1, response 1; Individual-Level Interventions—linked to CHECK
Q1_2	Long Integer	4	Question 1, response 2; Group-Level Interventions—linked to CHECK
Q1_3	Long Integer	4	Question 1, response 3; Street and Community Outreach—linked to CHECK
Q1_4	Long Integer	4	Question 1, response 4; Prevention Case Management—linked to CHECK
Q1_5	Long Integer	4	Question 1, response 5; Community Level Interventions—linked to CHECK
Q1_6	Long Integer	4	Question 1, response 6; Health Communications/Public Information—linked to CHECK
Q1_7	Long Integer	4	Question 1, response 7; Counseling, Testing, Referral, and Partner Notification—linked to CHECK
Q2_1	Long Integer	4	Question 2, response 1; MSM—linked to CHECK
Q2_2	Long Integer	4	Question 2, response 2; MSM/IDU (and other drug users)—linked to CHECK
Q2_3	Long Integer	4	Question 2, response 3; IDU—linked to CHECK
Q2_4	Long Integer	4	Question 2, response 4; Heterosexual—linked to CHECK

Q2_5	Long Integer	4	Question 2, response 5; Mother with/at risk for HIV—linked to CHECK
Q2_6	Long Integer	4	Question 2, response 6; General Public—linked to CHECK
Q3_1	Long Integer	4	Question 3, response 1; African American—linked to CHECK
Q3_2	Long Integer	4	Question 3, response 2; American Indian or Alaska Native—linked to CHECK
Q3_3	Long Integer	4	Question 3, response 3; Asian—linked to CHECK
Q3_4	Long Integer	4	Question 3, response 4; Native Hawaiian or Other Pacific—linked to CHECK
Q3_5	Long Integer	4	Question 3, response 5; Hispanic or Latino—linked to CHECK
Q3_6	Long Integer	4	Question 3, response 6; White—linked to CHECK
Q3_7	Long Integer	4	Question 3, response 7; More than one race—linked to CHECK
Q3_8	Long Integer	4	Question 3, response 8; Race unknown—linked to CHECK
Q4	Long Integer	4	Question 4; Prevention program is supported by CDC funds—linked to FUNDS
Q6	Long Integer	4	Question 6; Distance within which the majority of people receiving program live—linked to DIST_RSP
Q6_1D	Double	8	Question 6, response 1; distance specified (miles)
Q6_6D	Double	8	Question 6, response 6; distance specified (miles)
AddrSourceID	Long Integer	4	Source of Address—linked to AddressSources table
Lat	Double	8	Latitude of program location
Long	Double	8	Longitude of program location
BufDist	Double	8	Distance within which most services are provided

Table: S_FORM

Description: Contains CBO survey form information (blue form)

Field Name	Type	Size	Description
CBO_ID	Text	7	CBO identifier—linked to CBO
CBO_NAME	Text	100	CBO name given on form
R_FIRST	Text	25	First name of person filling out form
R_LAST	Text	25	Last name of person filling out form
R_PH	Text	10	Phone number of person filling out form
R_EXT	Text	5	Phone extension of person filling out form
EIN	Text	15	Organization's Employer Identification Number
SAME_LOC	Long Integer	4	All programs are provided from the same service location—linked to YORN
ADDR	Text	75	Same service location address
CITY	Text	35	Same service location city
ST	Text	2	Same service location state
ZIP	Text	9	Same service location ZIP code
AddrSourceID	Long Integer	4	Code for address source—linked to AddressSources

Table: T_AREA

Description: FIPS codes for areas served by program (Question 5)

Field Name	Type	Size	Description
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CBO_ID	Text	7	CBO identifier—linked to PROG
P_NO	Long Integer	4	Program identifier—linked to PROG
F_ID	Long Integer	4	FIPS area type—linked to F_TYPES
F_NUM	Text	7	FIPS code

Table: YORN

Description: Coding table for Yes or No responses

Field Name	Type	Size	Description
YORN_ID	Long Integer	4	Unique Yes/No identifier
Desc	Text	50	Yes/No description

3.2.2 Entity Relationship Diagram

The Entity Relationship Diagram (see Figure 3-2) shows the relationships between the various tables that make up the HIV Prevention Service Area Survey database. Each box represents a separate table, with the title at the top. Table field (column) names are listed within each box, with key fields separated at the top. (Key fields connect tables in the overall database structure.)

3.3 Development of Geospatial Data

The survey data stored in the Access database were integrated with a series of spatial data sets for subsequent mapping and analysis. Although the Access tables were set up in a manner that facilitated integration with GIS software, a number of steps were required to develop a fully functional GIS database from the survey data.

3.3.1 GIS Spatial Data Sets

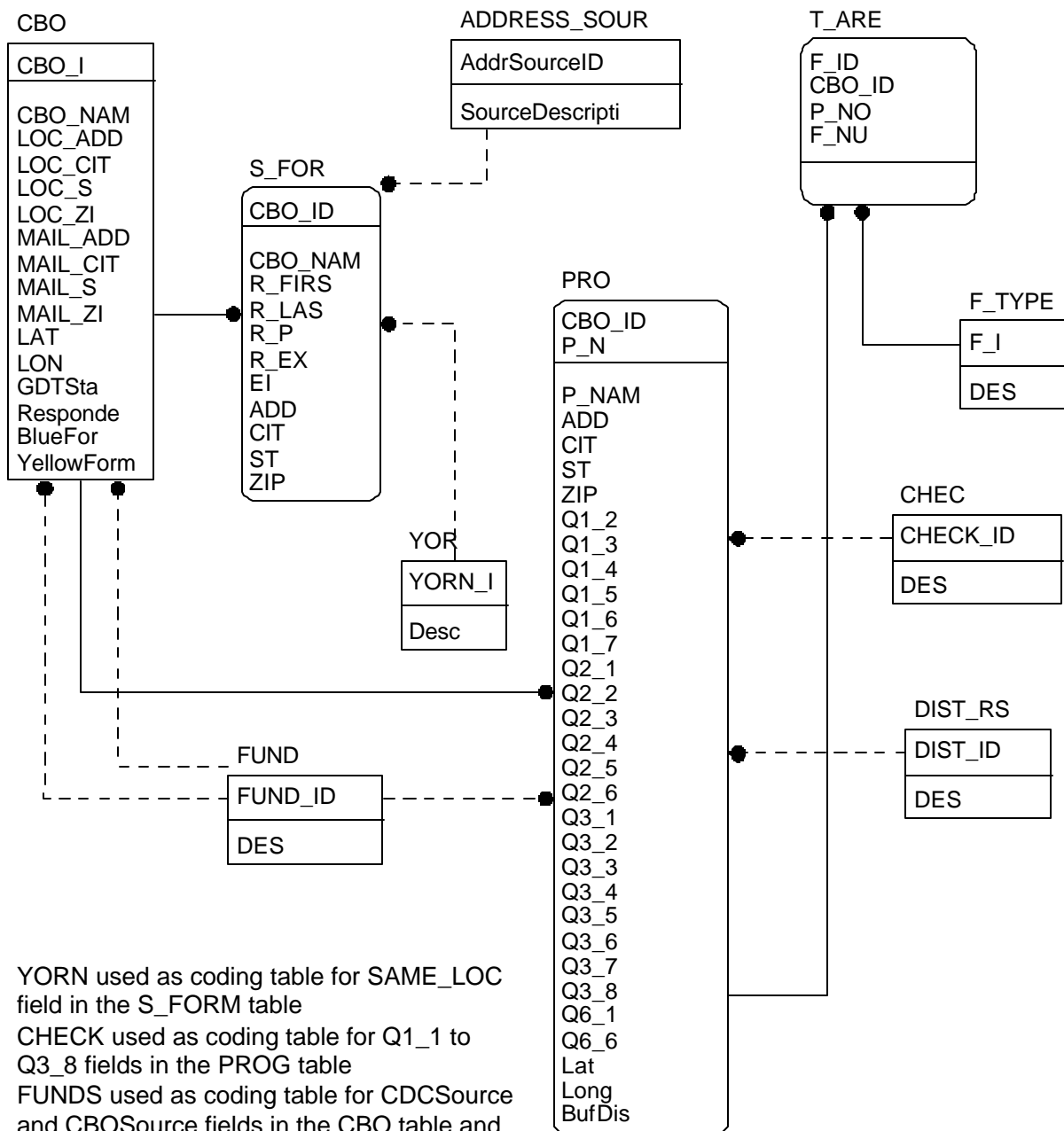
A number of standard spatial data sets (i.e., geographic boundary files) were set up prior to linkage with survey data. Some of these were provided by ESRI,¹ as part of its ESRI Data series and used as is; others required some processing. The processing of the spatial data sets was done in the ArcGIS 8.1.2, ArcMap, and ArcCatalog modules for use in ArcView 8.

The data sets included U.S. states/territories, counties, places, American Indian reservations, and ZIP code area boundaries. The county and U.S. territory boundaries came from generalized U.S. Census Topologically Integrated Geographic Encoding and Referencing (TIGER) 2000 ArcExport files aggregated by state or territory and obtained from the U.S. Census Web site. ArcCatalog was used to import, append, and clean the county boundary coverages² into a national coverage that contained all counties. The national coverage was then converted to an ESRI shapefile,³ and a single FIPS code field was added and populated from existing TIGER state and county FIPS code fields. The county borders end at the shorelines of major waterbodies (e.g., Chesapeake Bay) and do not

¹ Environmental Systems Research Institute, Redlands, CA, developers of ArcInfo, ArcView, ArcGIS, ArcMap, and ArcCatalog software.

² “Coverage” is the term used by ESRI to refer to a map layer developed with ArcInfo GIS software.

³ “Shapefile” is the term used by ESRI to refer to a map layer developed with ArcView GIS software.

Figure 3-2. HIV Prevention Service Area Survey Entity Relationship Diagram

- YORN used as coding table for SAME_LOC field in the S_FORM table
- CHECK used as coding table for Q1_1 to Q3_8 fields in the PROG table
- FUNDS used as coding table for CDCSource and CBOSource fields in the CBO table and Q4 field in the PROG table
- DIST_RSP used as coding table for Q6 field in the PROG table

extend into them. The state boundaries were obtained by dissolving the county shapefile on the state FIPS code field.

The ZIP code area boundaries are from ESRI Data version 8.1, and they include some small buffer polygons of ZIP code points that were added for this project. The American Indian reservation boundaries were developed from the U.S. Census TIGER 2000 files and contain a reservation name and FIPS code. The place (city/town) areas shapefile was obtained from ESRI Data but was originally derived from TIGER files of Census Designated Places. A number of the cities and towns that were identified by the survey participants did not exist in this file, so RTI augmented the places shapefile with places found in the online U.S. Geological Survey (USGS) Geographic Names Information System (GNIS). The GNIS latitude/longitude coordinate for each place was used to identify the ZIP code area in which it fell, and that ZIP code area was used to represent the place in the new places file. Each place area also had an associated place name and a place FIPS code. Lastly, a special areas layer was created manually from other background data sets for a few areas specified by survey participants that did not match any of the other background layers.

All responses from Question 5 were matched to one or more of the geographic boundary files described above. A different procedure was used to develop map layers of CBO and program locations.

3.3.2 CBO and Program Locations

The CBO and PROG tables in the Access database contain addresses for CBOs and their programs. These addresses were used to derive the CBO and program point locations in geographic coordinates (i.e., latitude and longitude). A procedure was established to assign addresses to CBOs and programs when this information was missing from the survey forms. First, if information was missing from the CBO form, the original address information provided by CDC was assigned to that CBO. This is the same address that was used for the survey mailing. Next, if HIV prevention program forms were missing address information, the CBO address was assigned to the respective HIV prevention program. In this manner, all CBOs and HIV prevention programs were provided with addresses.

CBO and program addresses were then sent to Geographic Data Technology (GDT), Lebanon, NH, for address matching, and a file was returned with the appropriate latitude/longitude coordinates and a status code, indicating the level of match (i.e., direct street address, ZIP+4, etc.).⁴ Geocoding documentation files are included for both CBOs and programs with the final project deliverables. Response codes were linked to geocoded CBO data, so response status (i.e., whether the CBO responded to survey or not) of each CBO could be queried and mapped.

3.3.3 Geographic Service Area Entities

The T_AREA table contains information about all geographic entities that were indicated, by respondents, to be part of a geographic service area. RTI originally planned to access all of the T_AREA and survey response data in ESRI's ArcView GIS software via Microsoft's Open Database Connectivity (ODBC) software. However, ArcView does not handle relates on multiple fields, and some problems have now been documented with the ArcView implementation of layers that are created from ODBC data.

⁴ A match to a direct street address is generally considered more accurate than matching to ZIP code or ZIP+4 centroids.

One of these problems concerns the ObjectID index field. The ObjectID index field is important because ArcGIS and ArcView require it to be present in a layer before it can be queried or related to other layers. Because of these problems, some additional data manipulation was required prior to the establishment of linkages between survey response data and service area entities.

First, in order to circumvent the “multiple field relate” limitation, a series of Access queries was used to split the T_AREA table into separate tables, by geographic unit (i.e., state, county, city, ZIP code, and reservation). Each of these tables had just three fields (CBO_PROG, FIPS, and CBO_ID) and functioned as a cross-reference between the spatial layers (with FIPS fields) containing the geographic coordinates for each geographic entity and the survey data organized by program (CBO_PROG) or CBO (CBO_ID).⁵ The CBO identifier field and program identifier field were merged into a CBO_PROG field to allow for the linking to program-level survey data via a single field.

RTI then set up an ODBC data source for the survey Access file using the ODBC Data Source Administrator in Windows 2000. After creating the ODBC data source, ArcView/ArcMap was opened and an Object Linking and Embedding Database (OLE DB) connection to the Access file was added, using the ODBC data source. RTI was then able to connect to the cross-referenced tables referred to in the preceding paragraph. It was then discovered that ArcView version 8.1 has a limitation that does not allow the tables accessed this way to be related to other tables or layers within ArcView.

RTI then went with the alternative implementation of exporting the Access tables to dBase IV files and loading them into ArcView directly without an ODBC connection. Accessing the tables this way allowed them to be related to the spatial layers and other tables. Ultimately, all of the survey files needed for GIS analysis were converted to dBase. Key fields (mostly CBO_PROG, CBO_ID, and FIPS) were indexed using ArcCatalog to facilitate the quick lookup of information in the tables. Spatial indexing of the spatial layers provided for a more rapid display of features even when zoomed into a small geographic area.

After establishing linkages among survey responses and the corresponding spatial data sets, additional map layers were made of geographic service areas.

3.3.4 Geographic Services Areas: Geopolitical Units (Question 5)

Geographic service areas of HIV prevention programs can be viewed by using the query tools in ArcView. Unfortunately, when the ArcView 8.1 query tools are used on tables that are related to a map layer (as opposed to attributes contained in the map layer itself), the related features in the map layer are not automatically selected and displayed. Thus, if a query is made on a survey data table (e.g., display the service areas of all programs that provide group-level interventions), the related geographic service areas will not automatically be selected and displayed. RTI developed a macro in Visual Basic for Applications (VBA) included with ArcView to resolve this issue. Using this “Update_Spatial_Selection” macro, one can perform a query and view all of the corresponding geographic entities associated with the service area of the programs selected.

⁵ The HIV prevention services data were collected by program. However, RTI anticipated that queries about intervention types, risk populations, racial/ethnic groups, and geographic service areas might need to be conducted at the CBO level. Therefore, survey data were collapsed by CBO and linked to the CBO table in Access. Thus, queries can be made at either CBO or program level.

The database has been set up in such a way that the queried program service areas consist of separate geographic components, e.g., if a program's service area consists of a city and the four adjacent counties, that service area would be displayed as five polygons: four counties and a city (the latter might overlap with county boundaries).

To perform more sophisticated geographic analyses and to allow easier querying of the program and CBO service areas, RTI decided to dissolve all of the disparate geographic entity components comprised by a program's service area into a single geographic entity. Note, this single entity might still consist of multiple polygons, but any interior boundaries of adjacent or overlapping components would have been dissolved, resulting in fewer polygons. Thus, the example cited above of four counties and a city would now be represented by a single polygon or area that included all of the geographic entities.

A series of GIS processing functions were used to create two new "dissolved" map layers: (1) a layer that contained a service area polygon(s) or area for each HIV prevention program, and (2) a layer that contained a service area polygon(s) for each CBO, that represented service areas of all programs administered by that CBO.

3.3.5 Geographic Services Areas: Distance-Based Units (Question 6)

Question 6 asked respondents to indicate the distance within which the majority of people served lived. These data are stored in the PROG table in the Access database. This information was linked to the map layer of program locations (described in Section 3.3.2), and the ArcView Buffer Wizard was used to buffer each program point by the corresponding distance estimate to create a new map layer.

3.4 Data Development Challenges: Data Integrity, Quality, and Processing Issues

RTI's GIS staff was presented with a number of challenges during the data development and analysis phases of the project. Some of these challenges were related to data quality and integrity issues. Others were related to issues revolving around the newly released ArcView 8.1 GIS software. Several of these challenges are described below.

3.4.1 Validity of Statewide Service Areas

During the initial phase of the GIS analysis, RTI staff noticed that many CBOs indicated that they provided prevention services to an entire state. Indeed, a total of 492 programs administered by 204 CBOs appeared to provide services to an entire state. In many cases, this did not seem feasible, and concerns were raised about the integrity of these responses. Staff suspected, in some cases, that survey respondents checked many of the geographic entities in Question 5 in an attempt to enter a "reverse address" of sorts. RTI staff developed a set of procedures for confirming the validity of state responses.

First, responses to Question 6 were used for quality control. If a CBO indicated that it served the entire state and a distance of, say, 100 or 200 miles was indicated in Question 6, that response was interpreted as valid. Responses of statewide service in geographically small areas, such as Washington, DC; Rhode Island; and Delaware, were also considered valid. If a CBO indicated that its program(s) served an entire state, but also checked off smaller units of geography (i.e., counties, cities), Question 6 data were used to confirm whether it would be appropriate to use only the smaller units of geography.

RTI was able to resolve questions about state-level responses for 152 of the 204 CBOs. Data on the remaining 52 CBOs and their programs were sent to CDC staff, who then called CBO program administrators to verify service area locations for their programs. The appropriate Access tables were then revised to reflect any changes.

3.4.2 Nonexistent Geographic Entities

In some cases, geographic entities provided by survey respondents simply could not be located in a geospatial database or even an atlas or gazetteer. The most common “missing” components were the ZIP code areas. In other words, some CBOs provided ZIP codes that could not be located in a geospatial database or even on the U.S. Postal Service Web site. For the few CBOs and programs that consisted solely of these missing components, RTI was unable to create corresponding polygonal service areas. For a few additional CBOs and programs whose service areas only partially consisted of missing components, the spatial representation of their service areas is incomplete. Missing component problems occurred primarily in the U.S. territories (e.g., Puerto Rico), where geospatial data coverage is less thorough than in most other parts of the country.

3.4.3 Polygon Data Not Available for Some ZIP Codes

Some of the ZIP codes identified by survey respondents did not exist in the ZIP code polygon (area) data set, but did exist in another data set of points only (i.e., represented by a single latitude/longitude coordinate). RTI made the assumption that these “point only” ZIP codes represented very small ZIP code areas. These ZIP codes were given “area” coverage through the creation of 0.1-mile buffers around their representative points.

3.4.4 Miscoding of Geographic Entities by RTI Survey Processors

During the analysis phase, RTI GIS staff checked each other’s work by viewing query results and maps. In some areas, anomalies were noted and checked. For instance, two Mississippi counties were identified as being associated with a Texas HIV prevention program. Each time an inconsistency was noted, the original surveys were requested from RTI’s Survey Operations Department and examined. In a handful of cases, the coders had misinterpreted the respondent’s handwriting, and corrections were made.

3.4.5 ODBC/ArcView Capabilities Not as Powerful as Expected

The implementation of the ODBC connection within ArcView was not powerful enough to effectively perform all of the GIS processing and display that RTI anticipated. Primarily, RTI was unable to relate to, and select by attributes, the ODBC-connected tables within ArcView. RTI considers this a bug or at least a serious shortcoming with the current version of ArcView and hopes that these issues will be addressed in future versions of the software. Fortunately, the procedures described in Section 3.3.3 provided a solution to these problems.

3.4.6 ArcView 8.1 Software Bugs

The current version of ArcView is a very different product than the ArcView 3.2 versions used previously. Being new, it has many bugs; some are well documented, others are not. A major bug encountered during the data development phase involved the “Dissolve” operation, which is needed to

create CBO and program service area spatial layers. The “Dissolve” operation within the Geoprocessing Wizard in ArcView stopped with an error when dissolving some service area components (state, county, place, etc.) into a single shape record per CBO or program. The trouble seemed related to attempting to dissolve a CBO or program service area that contained very complex component shapes. Luckily, the Geoprocessing Wizard in an older version of ArcView, version 3.2, was able to handle the dissolving of even the complex shapes. RTI used ArcView 3.2 to perform the dissolve operations and imported the resulting shapefiles back into ArcGIS.

National-Level Analysis of HIV Prevention Services

The primary purpose of this project was to construct a national, geographically referenced database of CDC-funded HIV prevention services provided by CBOs. As reported in Section 3.3, this database consists not only of CBO locations, but also of geographic areas that are served by any or all of their prevention programs. An additional project goal was to conduct a national analysis of CBO service area data.

The primary result of this project is a dynamic, spatially enabled database, the HIV Prevention Services Database, that will provide CDC with a wealth of information about HIV prevention services, with a large potential for geographic modeling, analyses, and mapping. The mapping and analyses, reported in the following sections, are by no means exhaustive. They are meant to (1) provide information about geographic trends and summaries; (2) demonstrate the potential of GIS and certain geographic methods as analytical tools for evaluating the comprehensiveness of HIV prevention services; and (3) further develop and enhance existing methodologies, such as gap analysis, for health services research.

This section contains a national-level analysis of CBO locations and survey response data. In a sense, the national-level analyses reported herein can be thought of as the geographic equivalent of a series of summary statistics. They include examinations of the frequencies and distributions of CBOs and services areas and results of simple queries on intervention types, risk populations, and races/ethnicities served. CBO and program locations are described against the backdrop of HIV/AIDS incidence and prevalence, and simple measures of inequities in geographic distribution are computed and reported.

4.1 HIV/AIDS Incidence and Prevalence in the United States

All 50 states, the District of Columbia, and U.S. territories and possessions report AIDS cases to the CDC using a standard surveillance case definition and report form. These are tabulated, by geographic area, age, race/ethnicity, sex, and exposure category, in CDC's *HIV/AIDS Surveillance Report*, which is published semiannually by the Division of HIV/AIDS Prevention (CDC, 2001c). Completeness of reporting varies somewhat by state and region, but it is estimated to be more than 85 percent for most areas. This report also includes data on HIV infection from case reports submitted by 34 geographic areas with confidential HIV reporting.

Additionally, CDC has published a report of HIV and AIDS in the United States in *Morbidity and Mortality Weekly Reports* that provides a summary of the epidemic from 1981 through 2000 (CDC, 2001d). As of December 31, 2000, CDC reported that 774,467 persons had been reported with AIDS in the United States. CDC's latest *HIV/AIDS Surveillance Report* indicates that 331,000 people were reported living with AIDS in the United States and its territories in June 2001 (CDC, 2001c). CDC

estimates that 800,000 to 900,000 people are currently living with HIV infection in the United States (CDC, 2001a).

The first AIDS cases were reported in the United States in June 1981. Throughout the 1980s, AIDS incidence increased rapidly. It peaked in the early 1990s when the AIDS surveillance case definition was expanded (in 1993) to include a wider range of AIDS-indicator diseases and HIV diagnostic tests (CDC, 2001c). AIDS incidence decreased in the mid- to late-1990s, due to factors such as advances in drug treatment? highly active antiretroviral therapy (HAART)? for HIV-infected individuals. Since 1999, the decline in both AIDS cases and deaths has slowed down (CDC, 2001a).

Throughout the epidemic, 85 percent of reported AIDS cases were of persons in the 20- to 49-year-old age group. Early in the epidemic, AIDS was primarily a disease of White men, with male-to-male sex the most common mode of exposure. In more recent years, the epidemic has disproportionately affected the African American community. CDC has reported that 38 percent of all AIDS cases in the United States have occurred among African Americans, although they make up only 12 percent of the total U.S. population. In 2000, the AIDS incidence rate for African Americans was 58.1 per 100,000 population, more than eight times the rate for Whites (CDC, 2002). Additionally, 63 percent of all women reported with AIDS in 2000 were African American.

Geographic patterns of HIV/AIDS incidence and prevalence generally follow population distribution, with the highest numbers in New York, California, Florida, and Texas and the lowest numbers in the Plains states and intermountain West. More than 39,000 new AIDS cases were reported between July 2000 and June 2001, and these have a similar geographic distribution. The national AIDS rate per 100,000 population (including U.S. territories) has been reported as 14.3. States with rates higher than the mean include California, the Gulf states (except Mississippi), several other southeastern states, and states along the eastern seaboard. Puerto Rico's AIDS rate is more than twice the national rate, and the District of Columbia has a rate of 166.2.

Of those states that have confidential HIV reporting, Florida and New Jersey have the highest numbers of people living with HIV infection, as shown in Figure 4-3 (California and New York do not report). Among these states, Florida and Texas reported the highest numbers of new HIV infection cases between July 2000 and June 2001.

Section 4.2 examines the geographic distribution of CBOs against the state-level backdrop of HIV/AIDS incidence and prevalence.

4.2 CBO Locations

In order to reduce survey response bias, an effort has been made, wherever possible, to include all 1,450 eligible CBOs in the national-level analyses. In this section and Section 4.3, this has been possible. Sections 4.4 and 4.5 require survey response data, thus analysis is limited to the 1,020 CBOs that responded to the survey.

Based on the CBO address locations and funding source information provided by CDC, RTI was able to geocode and map all 1,450 eligible CBOs. Figure 4-1 shows these locations, by funding type: direct, indirect, or both. When examining maps of point distributions, such as these, the viewer needs to keep in mind that, at the national scale, points in the same city will simply draw over each other. This can

be especially misleading in cities such as New York or Chicago with large numbers of CBOs. In spite of this overlap, some distributions stand out.

Point patterns suggest diverse approaches among states to funding CBOs.

Many states have a dispersed distribution of CBOs, indicating that CBOs provide services out of many cities and towns across the state. Particularly notable are Illinois, Montana, Maine, Colorado, Washington, Ohio, Kansas, Texas, and some of the northeastern states. In some states, the point pattern is very clustered, with services provided out of larger, more central locations. These include Arizona, Minnesota, Utah, South Dakota, Missouri, and Kentucky.

Included in the *Prevention Services Atlas* are additional maps that display CBO distribution by each funding type (direct, indirect, or both). By far, the majority of CBOs (1,263) are indirectly funded, and the patterns described in the preceding paragraph describe their distribution, as well. The survey population included 98 directly funded CBOs, and they are sparsely dispersed across the United States, located primarily in larger cities. The geographic distribution of CBOs with funding from both sources (n = 89) is even sparser yet, with many located in Puerto Rico, the District of Columbia, and some of the cities along the northeastern seaboard.

The spatial distribution of CBOs can be examined in the context of patterns of HIV/AIDS incidence and prevalence. RTI produced a series of maps, using data from CDC's *HIV/AIDS Surveillance Report* (CDC, 2001c) that show HIV/AIDS indicators and CBO locations. Figures 4-2 and 4-3 show, by state, the number of persons reported to be living with HIV infection and AIDS, respectively.

Figure 4-1. Directly and Indirectly Funded CBO Locations



Figure 4-2. Persons Reported to be Living with HIV Infection

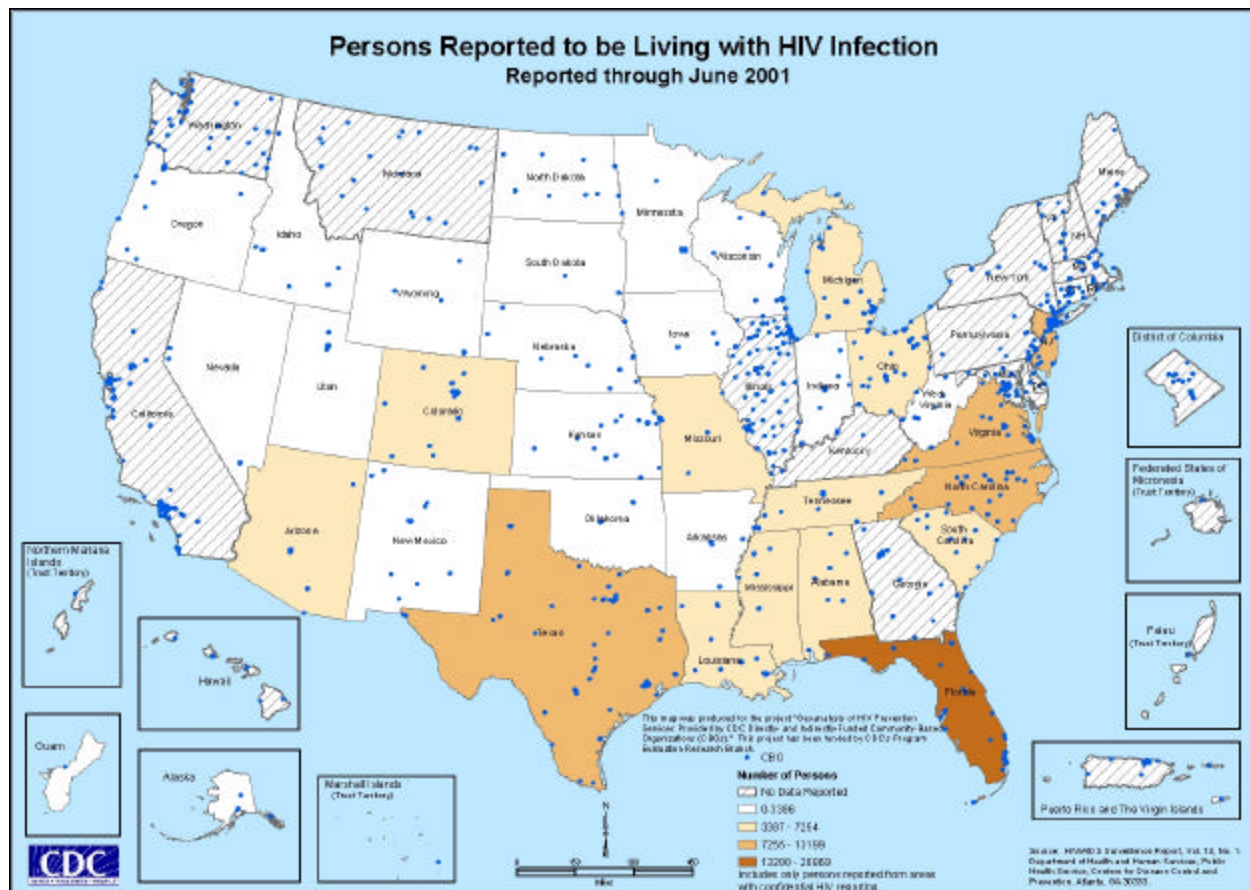
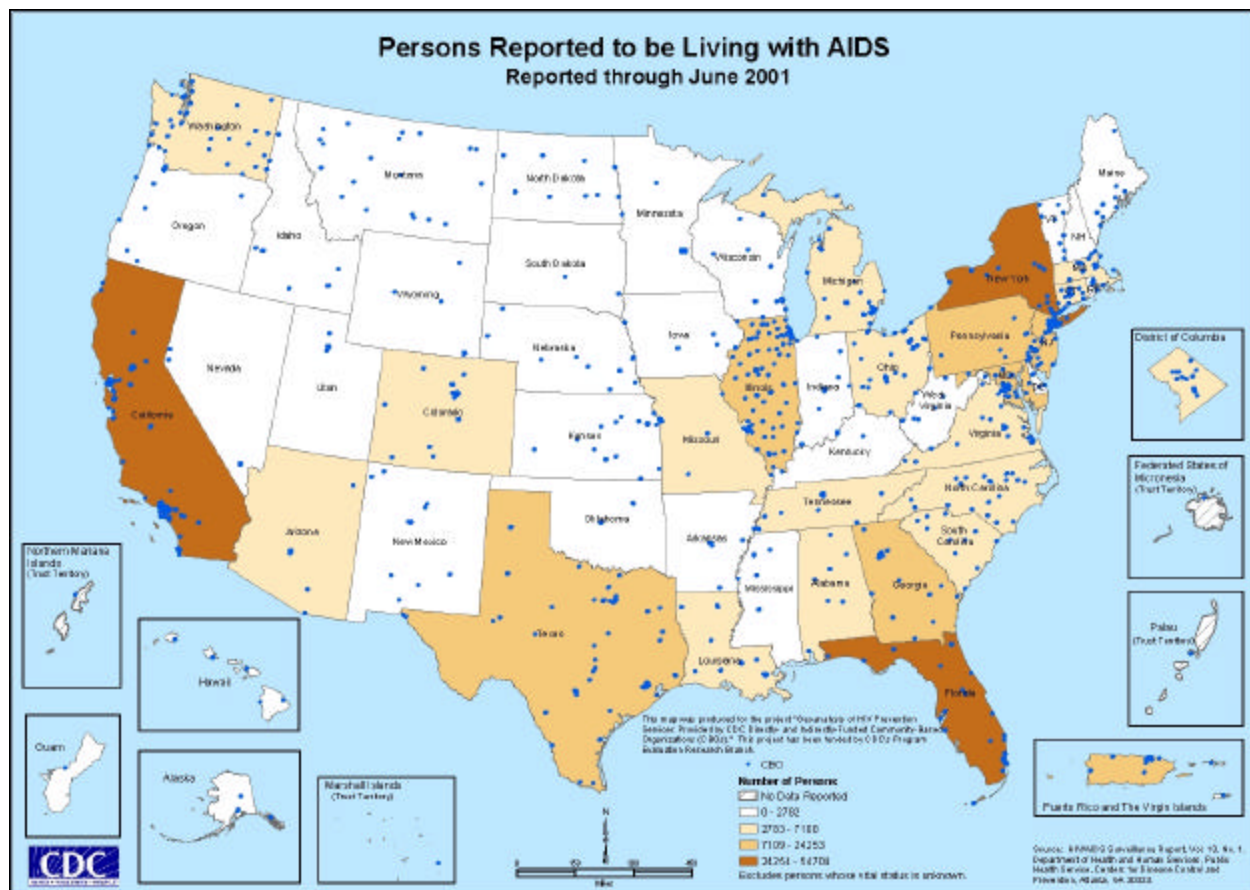
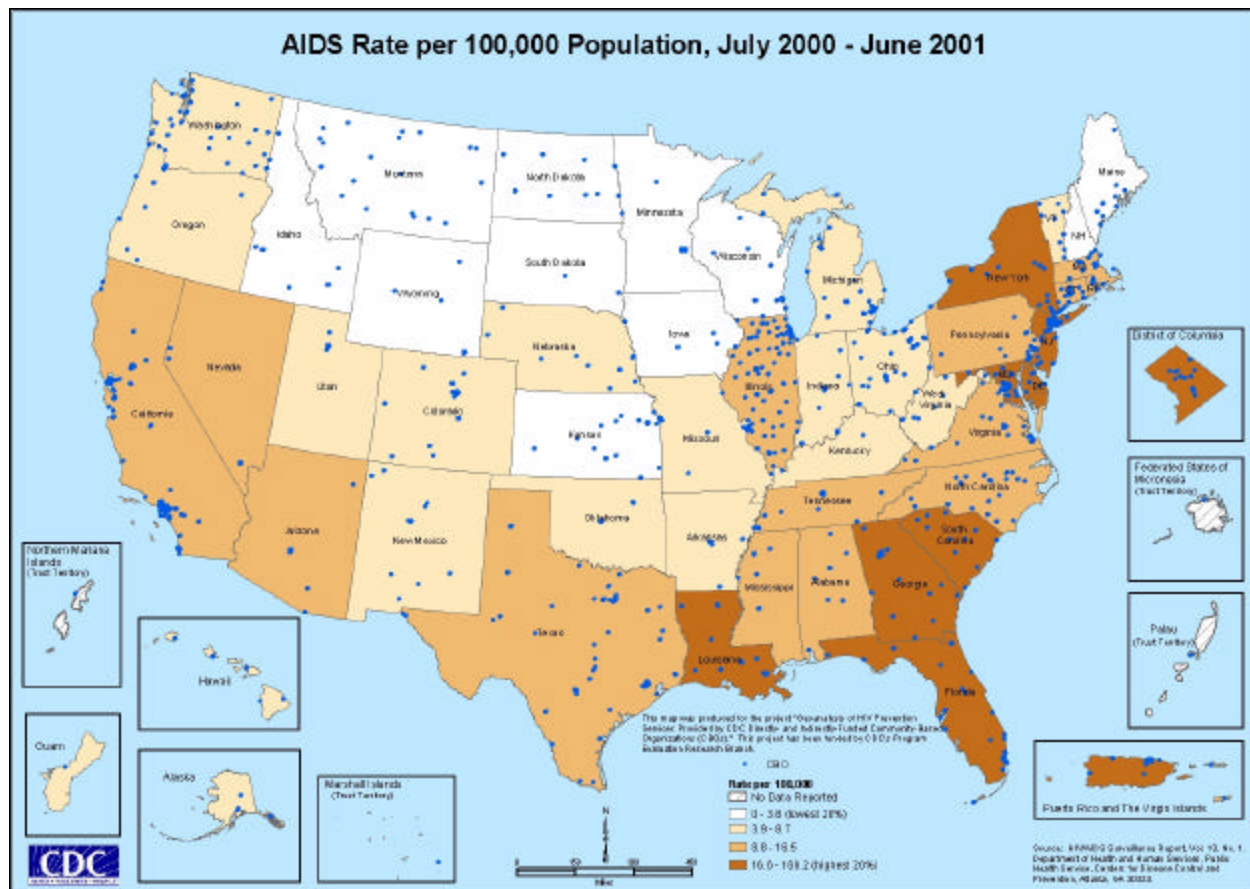


Figure 4-3. Persons Reported to be Living with AIDS



The state-level map of AIDS rates (Figure 4-4, below) per 100,000 population shows a very different distribution than the maps in Figures 4-2 and 4-3 because the rate is population based. Although the same states that have high numbers of new AIDS and HIV infections have high AIDS rates, a number of additional states with smaller populations also have rates that are in the highest 20 percent. Maryland, Delaware, Florida, New York, and Puerto Rico all have rates that are more than twice as high as the average U.S. rate of 14.3. The high rate in the District of Columbia (166.2) has already been noted.

Figure 4-4. AIDS Rate Per 100,000 Population



Thirteen states/territories have fewer than 10 CBOs. Of these, Alaska, Arkansas, Guam, Hawaii, Kentucky, and the Virgin Islands have AIDS rates that are higher than the 20th percentile. Many states with AIDS rates in the lowest 20th percentile have relatively high numbers of CBOs: Montana, Kansas, and Minnesota each have more than 20. While the spatial pattern of CBOs is dispersed in Montana and Kansas, most of the Minnesota CBOs are concentrated in the greater Minneapolis area, where the concentration of AIDS cases is greater (163 of the 184 AIDS cases reported for Minnesota from July 2000 to June 2001 were in the Minneapolis–St. Paul Metropolitan Statistical Area (MSA)).

At first glimpse, there appear to be some inequalities in the distribution of CBOs by state. For instance, Georgia and Puerto Rico seem to have a shortage of CBOs, and Montana and Kansas seem to have an abundance. However, type of service and CBO capacity, either in terms of financial resources or number of people served, have not been evaluated, and using aggregate data (e.g., AIDS rate, HIV cases) for a state masks local variations in service provision and need.

To provide some understanding of more localized variations in rates, Figure 4-5 maps AIDS rates for MSAs with populations of at least 500,000, of which there are 103. The five MSAs with the highest rates are Miami, New York, Ft. Lauderdale, West Palm Beach, and San Juan (Puerto Rico), in that order. As shown in Figure 4-6, there is a concentration of high AIDS rates along the eastern seaboard, from Maryland to New York. Lower rates can be seen in MSAs in western New York and the upper Midwestern states.

Figure 4-5. AIDS Rates for Metropolitan Statistical Areas

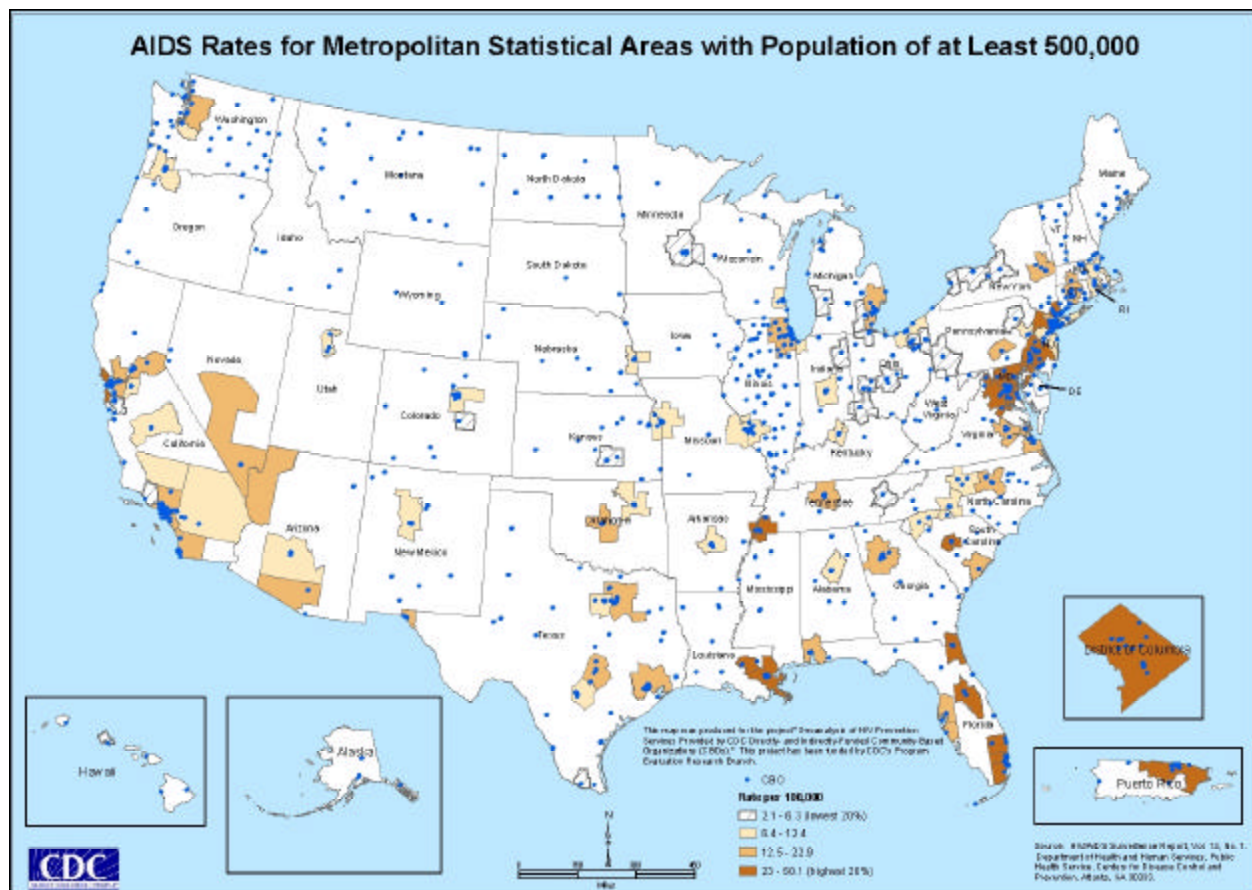
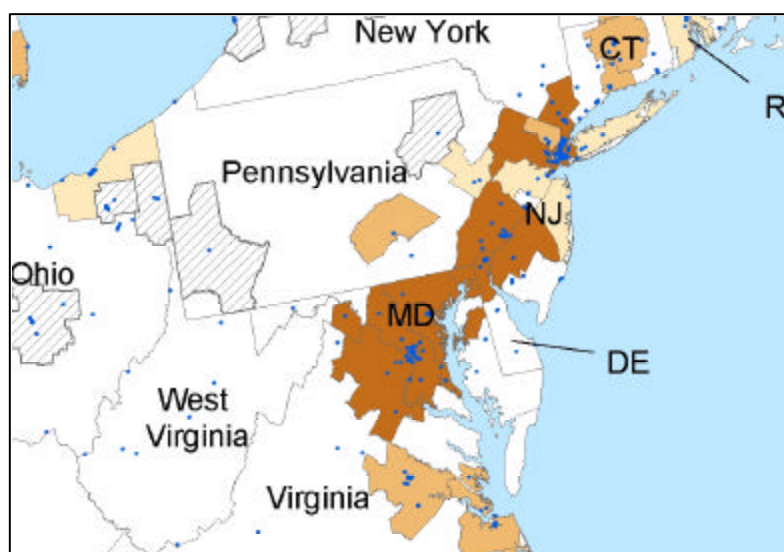


Figure 4-6. Concentration of High AIDS Rates along Eastern Seaboard



CDC's *HIV/AIDS Surveillance Report* (CDC, 2001c) indicates that only 3,068 (7.5%) of the 40,894 reported AIDS cases for 2000–2001 were in nonmetropolitan areas.¹ The fact that 22.3 percent of the 1,450 CBOs funded by CDC are located in nonmetropolitan counties *suggests* that these areas are not underrepresented (see Table 4-1 below). However, this is based on a raw CBO count. Data on HIV incidence and prevalence in rural areas and on CBO capacity are lacking. Appendix D contains information on the number of rural and urban CBOs by state.

Table 4-1. Distribution of CBOs by Urban/Rural Status

CBOs	Number	%
Urban (MSA)	1,126	77.7
Rural (non-MSA)	324	22.3
Total	1,450	

Thus far, the interpretation of CBO locations has been descriptive. The next section uses some common measures of spatial distribution to gain a better understanding of inequities across the United States and to provide examples of methods that can be applied to these data in future analyses.

4.3 Measures of Spatial Distribution: Location Quotient and Coefficient of Localization

The previous section described the locations of CBOs, programs, and service areas, but it did not provide a measure of how the distribution of these locations departs from an expected norm. In general, the geographic distribution of health care resources in the United States is not equitable (Gesler and Savitz, 1994), and this may or may not apply to the CDC-funded CBOs in this study. One might ask the following questions about CDC-funded CBOs: Is there an equitable distribution of CBOs that corresponds to the underlying population distribution? How does the geographic distribution of CBOs compare with the underlying distribution of specific subpopulations or HIV/AIDS rates? Are there states or geographic areas with disproportionately low numbers of CBOs that provide HIV prevention services, and do these areas represent gaps in service provision?

While equity is a difficult concept to define and measure, medical geographers have used a number of indices to measure inequalities in the geographic distribution of health care resources (Joseph and Hall, 1985; Shannon and Cutcheon, 1994; Brown, 1994). The most common of these is the location quotient (LQ). The LQ is an index of relative distribution that compares the values of two distributions; it is a ratio of two percentages. It is easy to compute and can be calculated for each geographic area of interest. It is useful when the intent is to examine a spatial pattern, as opposed to a statistical correlation (Meade, 1994). Joseph and Phillips (1984) provides the equation that has generally been used for calculating an LQ:

$$LQ_i = \frac{V_i / P_i}{\sum_i V_i / \sum_i P_i}$$

¹ For this report, the terms “metropolitan” and “urban” are defined as populations or locations in any county that is part of an MSA.

where

- LQ_i = Location quotient for region i
 V_i = Value of the variable of interest (e.g., resource, population subcategory, etc.) for region i
 P_i = Population of region i .

The denominator does not have to reflect population; it can pertain to other values, such as land area or disease rates. An LQ greater than 1 indicates that an area has more than its share of a given variable or resource and a value of less than 1 indicates the opposite. LQ must be interpreted carefully, however, because values less than 1 are compressed in a range from 0.0 to 1.0, whereas values greater than 1 could potentially range to infinity. LQs provide a useful picture of resource distribution in the exploratory phase of analysis.

For this analysis, three series of LQs were computed for the 50 states, the District of Columbia, and Puerto Rico. In order to reduce the effects of response bias, these calculations were based on the locations of all 1,450 CBOs that were eligible to respond to the survey (see Section 2.4), whether they responded to the survey or not. LQs were computed to examine

- | The distribution of CBOs relative to the general population distribution;
- | The distribution of CBOs relative to the distribution of the African American population; and
- | The distribution of CBOs relative to the number of persons living with AIDS.

LQs of CBO distribution by general population are mapped, by state, in Figure 4-7. All population data were obtained from the Census 2000 SF1 files (Bureau of the Census, 2000). For each state, the LQ was calculated as follows:²

$$\frac{\% \text{ of CBOs in state (i.e., number of CBOs in state} \div 1,450)}{\% \text{ of population in state (i.e., state population} \div \text{total U.S. population)}}$$

Each state's LQ is printed in Figure 4-7, under the state name. In general, the southeastern states have low quotients, indicating that they may be underserved, given their populations. Other states that have low quotients include many of the Midwestern states (Illinois being an exception), Arizona, Pennsylvania, Puerto Rico, and New Hampshire. States that have high quotients include some of the western states with low populations, Illinois, the District of Columbia, and some of the northeastern states.

In terms of raw numbers of CBOs and state populations, these LQs provide a quick snapshot of how and where CBOs are distributed. These quotients must be interpreted with caution, however, because states with low population numbers have low denominators in the LQ equation, resulting in

² The LQ is a ratio of proportions; consequently, the same value would be obtained by the following calculation:

$$\frac{\text{number of CBOs in state} \div \text{population of state}}{1,450 \text{ CBOs} \div \text{total U.S. population}}$$

Location Quotients of CBO Distribution by General Population

The map displays the location quotient for each state, with colors indicating the range of values. The legend shows the following ranges:

- 0 - 0.75 (Light Yellow)
- 0.75 - 1.25 (Yellow)
- 1.25 - 2.0 (Orange)
- Greater than 2.0 (Dark Brown)

States with a location quotient greater than 2.0 include Montana, North Dakota, Wyoming, Nebraska, Kansas, and Colorado. States with a location quotient between 1.25 and 2.0 include Washington, Oregon, Idaho, Nevada, Utah, Arizona, New Mexico, Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina, Virginia, West Virginia, Maryland, Delaware, Pennsylvania, New York, Connecticut, Massachusetts, Vermont, New Hampshire, and Maine. States with a location quotient between 0.75 and 1.25 include California, Oregon, Idaho, Nevada, Utah, Arizona, New Mexico, Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina, Virginia, West Virginia, Maryland, Delaware, Pennsylvania, New York, Connecticut, Massachusetts, Vermont, New Hampshire, and Maine. States with a location quotient between 0 and 0.75 include Washington, Oregon, Idaho, Nevada, Utah, Arizona, New Mexico, Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina, Virginia, West Virginia, Maryland, Delaware, Pennsylvania, New York, Connecticut, Massachusetts, Vermont, New Hampshire, and Maine. The District of Columbia has a location quotient of 5.87. Puerto Rico has a location quotient of 0.62. Hawaii has a location quotient of 1.14. Alaska has a location quotient of 2.94.

Location Quotient

- 0 - 0.75
- 0.75 - 1.25
- 1.25 - 2.0
- Greater than 2.0

Location Quotient by State

State	Location Quotient
Alaska	2.94
Arizona	0.39
Arkansas	0.67
California	0.76
Colorado	1.29
Connecticut	2.26
Delaware	3.78
District of Columbia	5.87
Florida	0.48
Georgia	0.48
Hawaii	1.14
Idaho	1.53
Illinois	2.02
Indiana	0.75
Iowa	0.61
Kansas	2.21
Kentucky	0.24
Louisiana	1.11
Maine	2.45
Maryland	3.78
Massachusetts	1.16
Michigan	0.95
Minnesota	1.00
Mississippi	0.90
Missouri	0.84
Montana	5.26
Nebraska	1.85
Nevada	0.79
New Hampshire	0.44
New Jersey	1.29
New Mexico	1.74
New York	1.29
North Carolina	0.66
North Dakota	5.85
Ohio	0.57
Oklahoma	0.45
Oregon	0.81
Pennsylvania	0.52
Rhode Island	1.26
South Carolina	0.59
South Dakota	0.52
Tennessee	0.63
Texas	0.83
Utah	1.06
Vermont	0.44
Virginia	1.20
Washington	1.51
West Virginia	1.09
Wisconsin	0.66
Wyoming	3.60

Location Quotient by State

State	Location Quotient
Alaska	2.94
Arizona	0.39
Arkansas	0.67
California	0.76
Colorado	1.29
Connecticut	2.26
Delaware	3.78
District of Columbia	5.87
Florida	0.48
Georgia	0.48
Hawaii	1.14
Idaho	1.53
Illinois	2.02
Indiana	0.75
Iowa	0.61
Kansas	2.21
Kentucky	0.24
Louisiana	1.11
Maine	2.45
Maryland	3.78
Massachusetts	1.16
Michigan	0.95
Minnesota	1.00
Mississippi	0.90
Missouri	0.84
Montana	5.26
Nebraska	1.85
Nevada	0.79
New Hampshire	0.44
New Jersey	1.29
New Mexico	1.74
New York	1.29
North Carolina	0.66
North Dakota	5.85
Ohio	0.57
Oklahoma	0.45
Oregon	0.81
Pennsylvania	0.52
Rhode Island	1.26
South Carolina	0.59
South Dakota	0.52
Tennessee	0.63
Texas	0.83
Utah	1.06
Vermont	0.44
Virginia	1.20
Washington	1.51
West Virginia	1.09
Wisconsin	0.66
Wyoming	3.60

Location Quotient by State

State	Location Quotient
Alaska	2.94
Arizona	0.39
Arkansas	0.67
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Colorado	1.29
Connecticut	2.26
Delaware	3.78
District of Columbia	5.87
Florida	0.48
Georgia	0.48
Hawaii	1.14
Idaho	1.53
Illinois	2.02
Indiana	0.75
Iowa	0.61
Kansas	2.21
Kentucky	0.24
Louisiana	1.11
Maine	2.45
Maryland	3.78
Massachusetts	1.16
Michigan	0.95
Minnesota	1.00
Mississippi	0.90
Missouri	0.84
Montana	5.26
Nebraska	1.85
Nevada	0.79
New Hampshire	0.44
New Jersey	1.29
New Mexico	1.74
New York	1.29
North Carolina	0.66
North Dakota	5.85
Ohio	0.57
Oklahoma	0.45
Oregon	0.81
Pennsylvania	0.52
Rhode Island	1.26
South Carolina	0.59
South Dakota	0.52
Tennessee	0.63

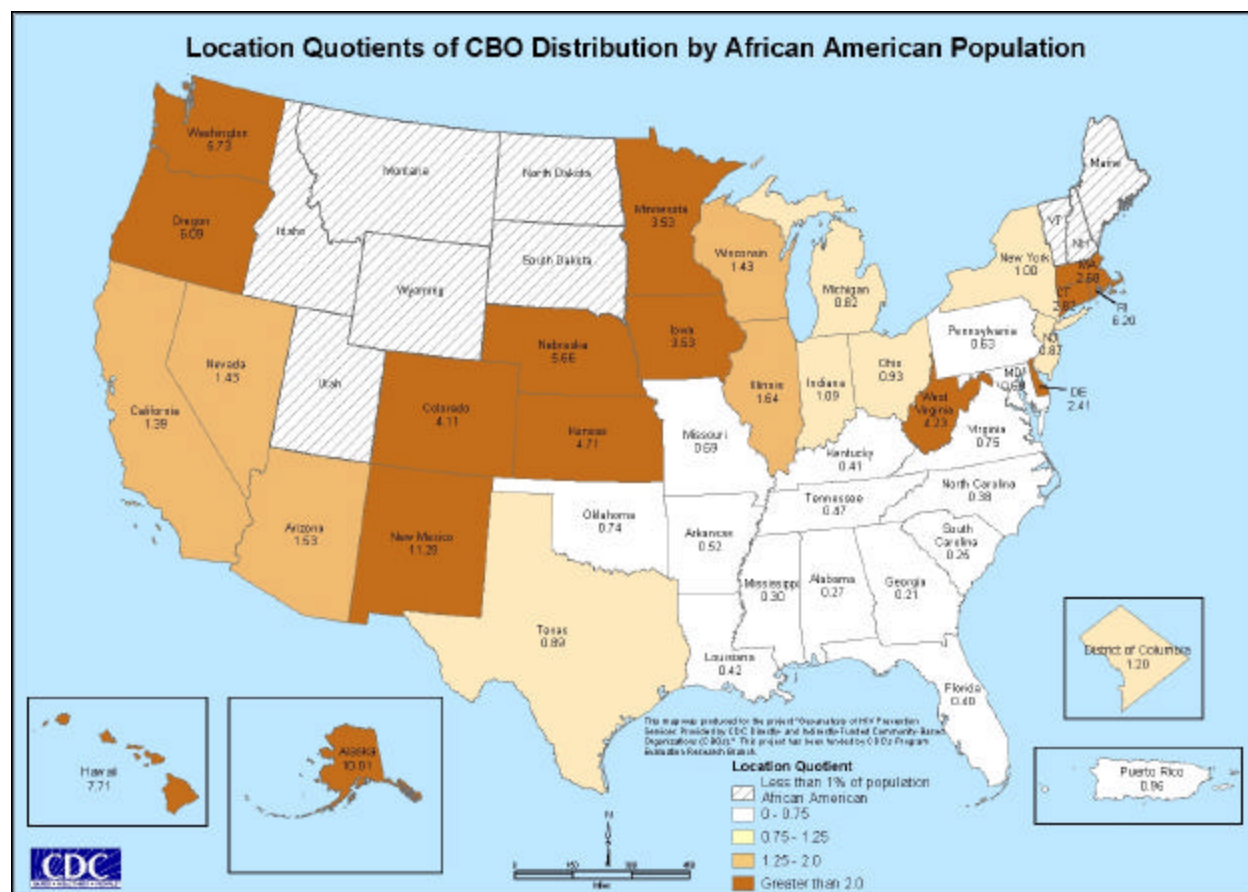
In the United States, AIDS is an epidemic that primarily affects MSMs and racial/ethnic minorities, and infection rates among African Americans are disproportionately high (CDC, 2001c, 2001d). LQs of CBO distribution by African American population were computed and are shown in Figure 4-8. For each state, the LQ was calculated as follows:³

$$\frac{\text{\% of CBOs in state (i.e., number of CBOs in state} \div 1,450)}{\text{\% African American population in state}}$$

(i.e., state African American population \div U.S. African American population)³

³ In this and subsequent components of the analysis, the Census 2000 SF1 census variable used to represent the African American population is P003004: Population of one race – Black or African American alone (Bureau of the Census, 2000). Although multiracial data (i.e., data on population of two or more races) are available, they are awkward to use and analyze in the context of this study. In all states except Hawaii and Alaska, the percentage of the total population that self-reported as “population of one race” was higher than 95. For Hawaii and Alaska, these percentages were 78.6 and 94.6, respectively.

Figure 4-8. Location Quotients of CBO Distribution by African American Population



In nine states, African Americans constitute less than 1 percent of the total state population. LQs were not computed for these states (small denominators would have resulted in gross inflation of quotient values). Not unexpectedly, the states that are underserved are mostly southeastern states, where African Americans constitute a larger percentage (generally more than 15%) of the population. The exception is Washington, DC, with an LQ of 1.2. Again, these LQs represent the full range of 1,450 CBOs and do not take into account those CBOs that specifically target or serve African Americans.

LQs were also computed to examine the relationship between CBO locations and the distribution of persons living with AIDS (see Figure 4-9).⁴ These LQs were computed for each state as follows:

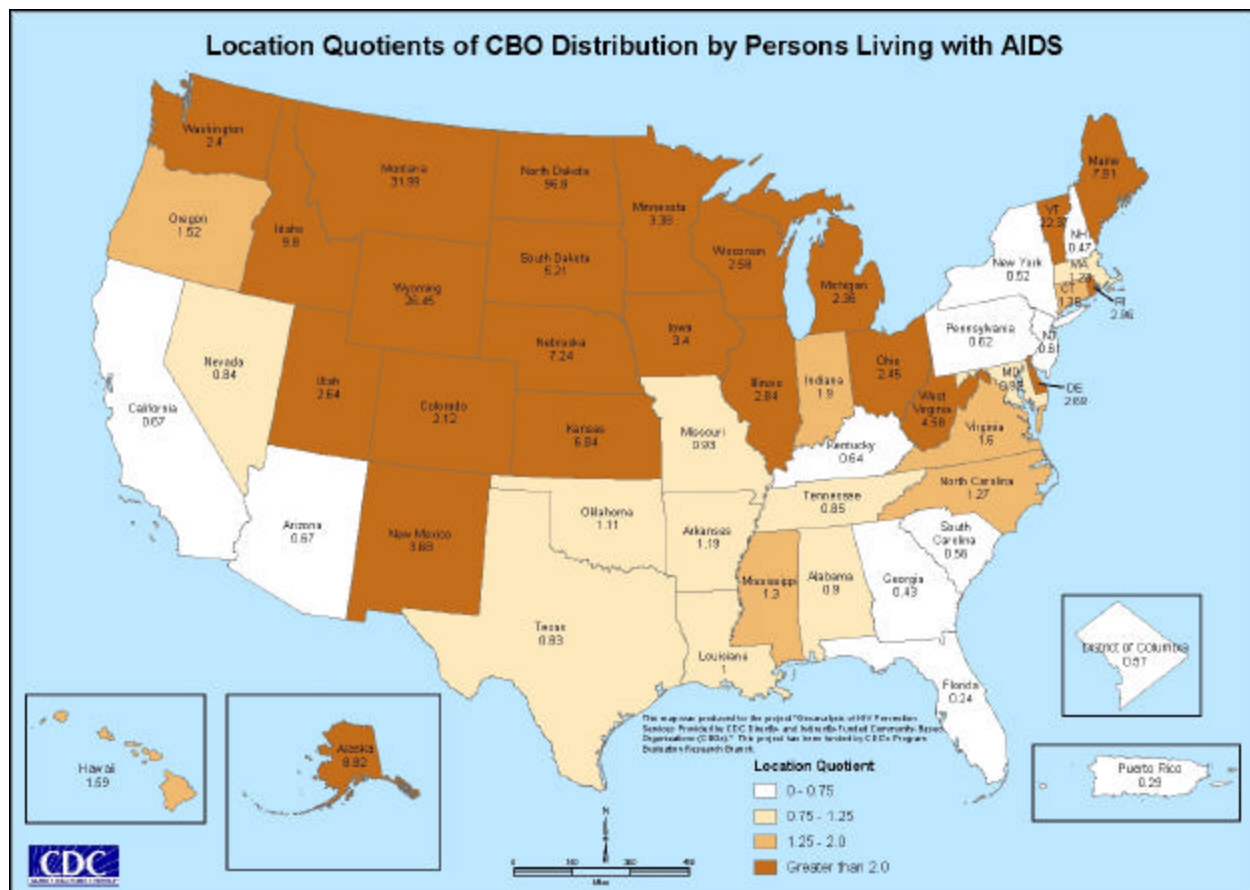
$$\frac{\% \text{ of CBOs in state (i.e., number of CBOs in state} \div 1,450)}{\text{state \% of persons living with AIDS}}$$

(i.e., persons living with AIDS in state \div persons living with AIDS in U.S.)

The states with the highest numbers of persons living with AIDS are New York, California, Florida, Texas, and New Jersey, in that order. LQs for these states are all less than 1: 0.52, 0.67, 0.24,

⁴ A preferable measure would have been persons living with HIV infection or HIV infection cases, but those data are not available for all states.

Figure 4-9. Location Quotients of CBO Distribution by Persons Living with AIDS



0.83 and 0.61, respectively. Florida, Texas, and New Jersey have confidential HIV reporting and have the highest numbers of new HIV infection cases⁵ (CDC, 2001c). Florida appears to be particularly underserved, in terms of raw numbers of CBOs, persons living with AIDS and HIV infection, and new infection cases. Of states that report, North Carolina ranks third in the number of persons living with HIV infection and fourth in new HIV infection cases, but has an LQ of 1.27.

In summary, the three series of LQs reported in this section provide a cursory analysis of variations in CBO distribution among states. These values are all relative and provide no information about the adequacy of intervention services on the whole or within a smaller, more specific geographic area. But they do point to areas that appear to be underserved, in particular, some of the southeastern states, Kentucky, and Pennsylvania.

Nearly two decades ago, Joseph and Phillips (1984) commented on how infrequently the LQ was used in geographic analyses of health services. They also noted other measures of regional concentration, many of them heavily used in economic geography, that were useful for the analysis of health services. Particular reference was made to the *coefficient of localization* (CL):

⁵ Of states that report, July 2000 – June 2001

Indeed, the location quotient and coefficient of localization together constitute a useful analytical package which could have application in health services planning (Joseph and Phillips, 1984:98).

The CL is used to compute a single value (as opposed to a value for each state or region) that measures the concentration of a phenomenon relative to a base magnitude, such as population or land area. Joseph (1982) has provided the following formula for its computation:

$$CL = 1/2 \sum_i \left| \frac{V_i}{\sum_i V_i} - \frac{P_i}{\sum_i P_i} \right|$$

where

CL = Coefficient of localization
 V_i = Value of variable of interest in region i
 P_i = Population of region i

The theoretical range of the CL is from 0.0 to 1.0, with 0.0 indicating that the resource is distributed across regions in the same proportions as the population. Increasing values correspond to increasing levels of localization (i.e., unequal distribution). The distribution of the base population (i.e., the P values in the equation), however, can have a dramatic effect on the upper limit of the coefficient, and it needs to be interpreted carefully (Joseph, 1982).

The LQs shown in Figures 4-7, 4-8, and 4-9 show substantial variations in the distribution of CBOs among states, measured against a base factor or population, but do not give a single, overall indicator of how evenly distributed they are. CLs were computed for these same three sets of variables. Results are shown in Table 4-2.

Table 4-2. Coefficients of Localization

Variable/Base Population	Computed CL
CBO distribution and general population	0.21
CBO distribution and African American population	0.31
CBO distribution and persons living with AIDS	0.32

Interpretation of the computed CLs in this analysis (0.21, 0.31, and 0.32, respectively) indicates that the distribution of CBOs, on the whole, is not extremely localized and is somewhat even, although it is less even for African American populations and persons living with AIDS than it is for the general population. That said, the CL values indicate that noticeable differences in the distribution of CBOs among states do exist, and the LQs reported earlier in this section point to areas of potential problems or gaps.

4.4 Program Responses, Locations, and Service Areas

As indicated earlier in this report, 1,020 of 1,450 CBOs responded to the survey. Each CBO filled out one or more forms that provided information about intervention type, risk population, races/ethnicities served, and geographic service areas. ***In all, information about 3,028 prevention programs was provided by the survey.***

Survey response data indicate that the number of HIV prevention programs administered by CBOs ranges from 1 to 23, as shown in Figure 4-10. Four-hundred and thirty-two CBOs filled out only one form, but the majority of responding CBOs had more than one HIV prevention program. The average number of programs varied by funding type, in the following order: direct, indirect, and both (see Table 4-3). As suggested in Section 2, CBOs that received both direct and indirect funding appear to have higher numbers of HIV prevention programs, a fact that might have influenced the response rate, given that these CBOs would have had more forms to fill out.

Figure 4-10. Number of HIV Prevention Programs Administered by CBO

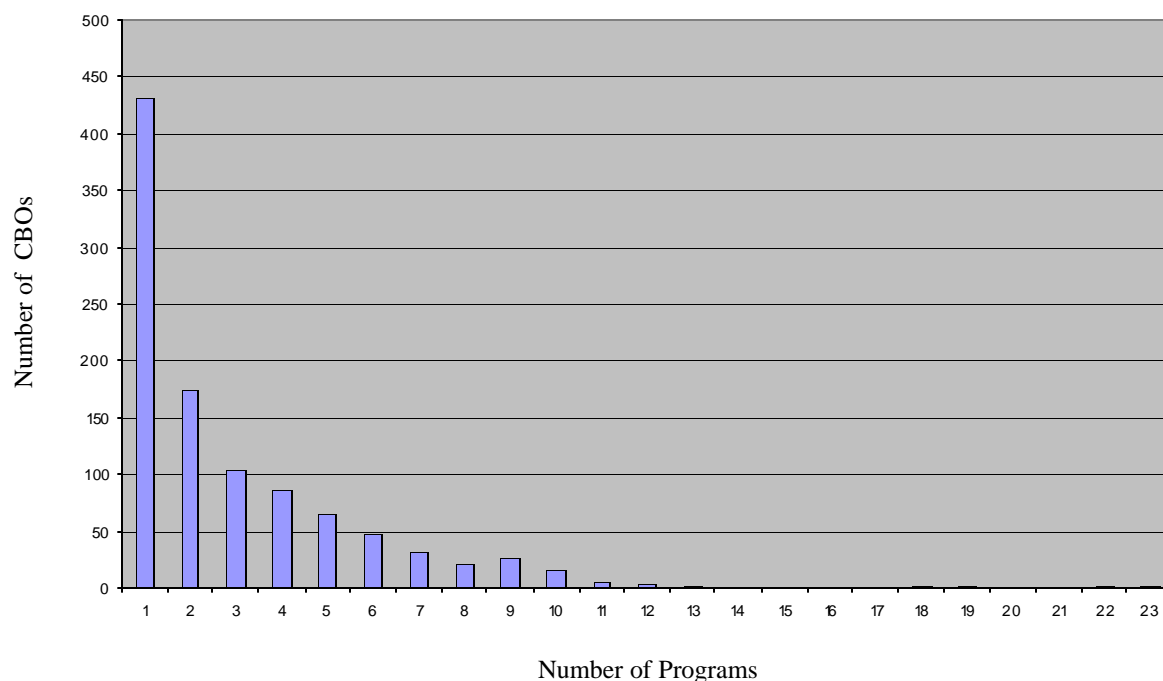
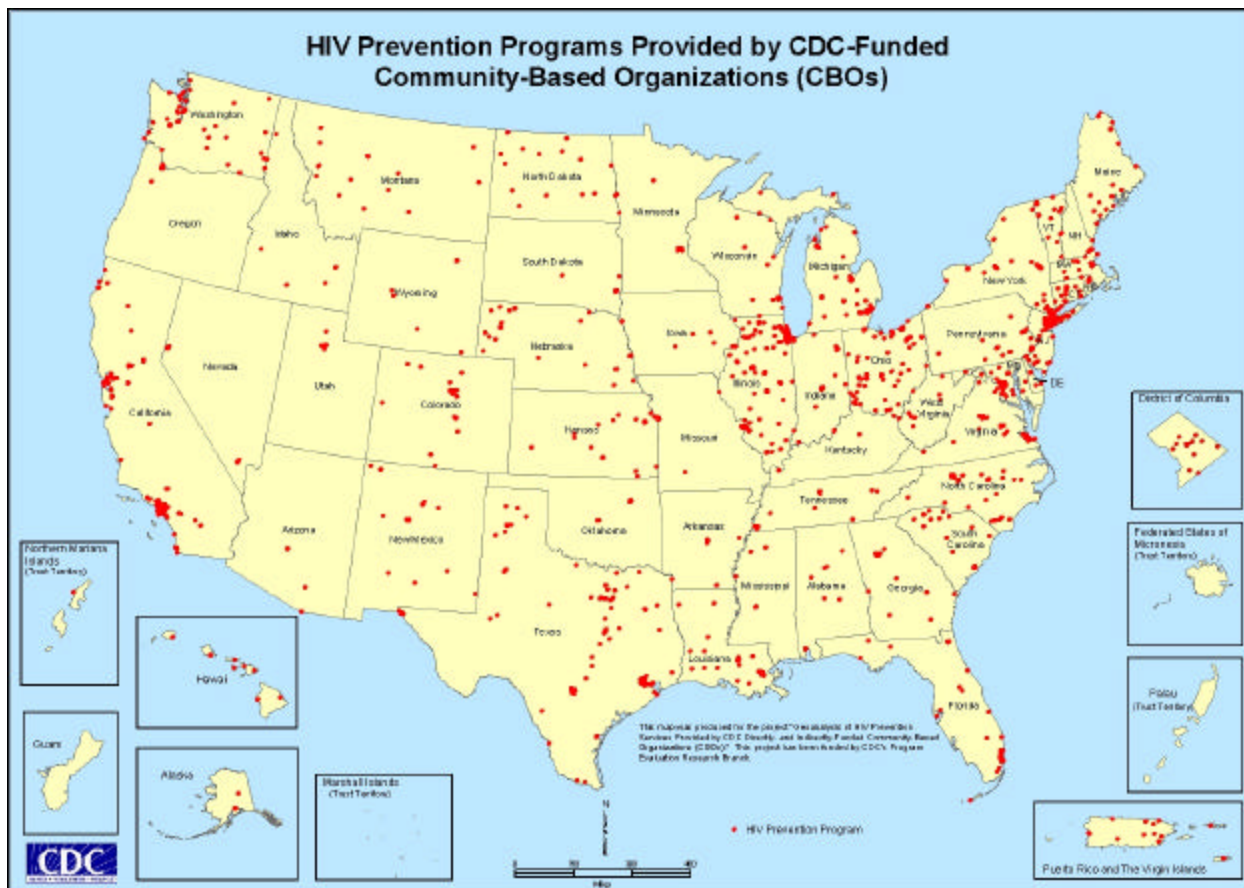


Table 4-3. Average Number of HIV Prevention Programs by CBO Funding Source

Funding Source	No. of Programs	No. of CBOs	Average No. of Programs
Direct	206	77	2.7
Indirect	2,620	887	3.0
Both	202	56	3.6

Figure 4-11 shows the geographic distribution of HIV prevention programs administered by responding CBOs. At first glance, this distribution may appear similar to the distribution in Figure 4-1, which gives the distribution of all 1,450 CBOs. However, programs for the 430 nonresponding CBOs are not shown on this map because data for those programs are currently unavailable. This map does show, however, a greater geographic dispersion of program locations than of CBO locations, reflecting the fact that some CBOs have programs at multiple locations.

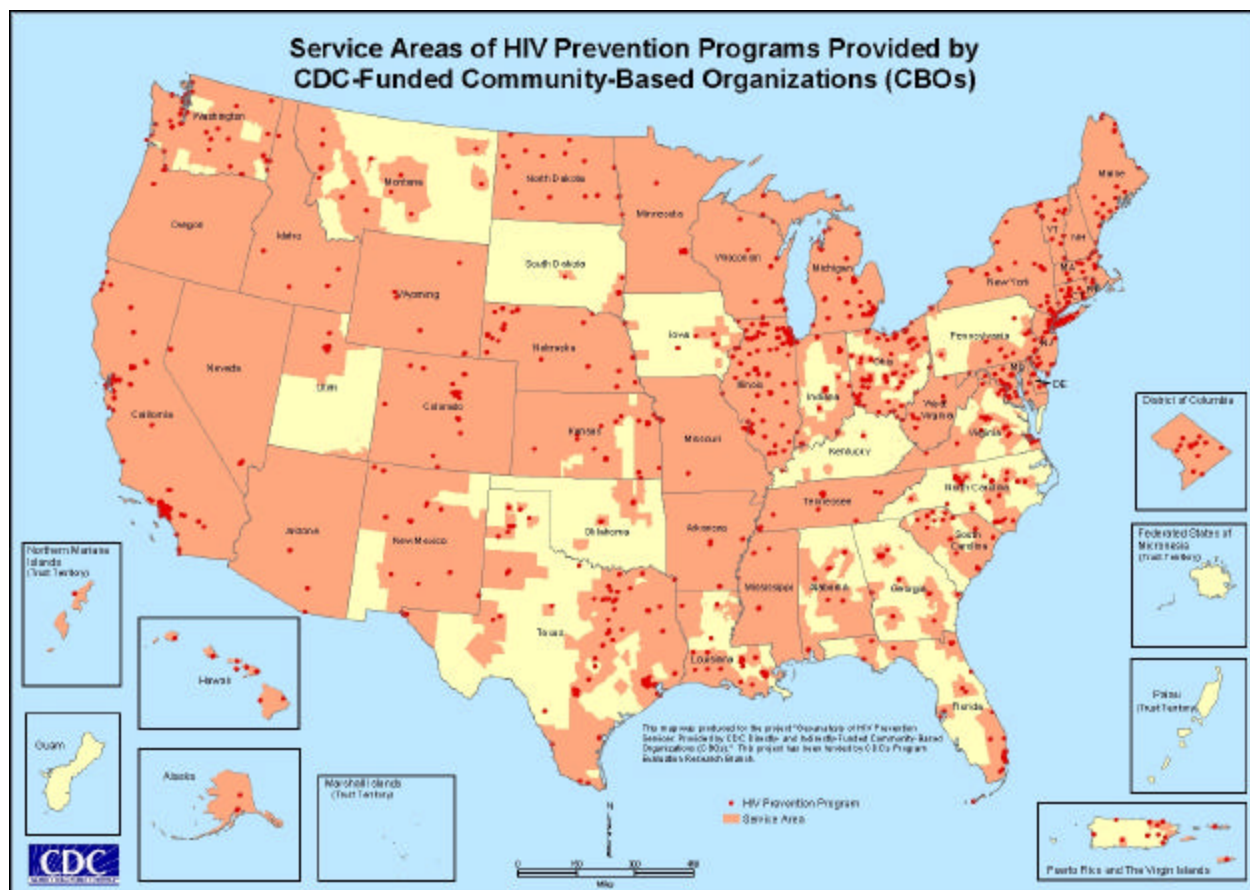
Figure 4-11. HIV Prevention Programs Provided by Responding CBOs

The distribution of geographic service areas of HIV prevention programs can provide more insight into gaps in coverage than actual program locations. The most important outcome from this project is a rich database of HIV prevention programs and their service areas. This database can be queried in an infinite number of ways to show combinations of service types, target populations, and service areas, or it can be queried to show the service area for a single program or CBO.

As noted in Section 2, service area data were collected by geopolitical units (i.e., state, county, city/town, ZIP code, reservation) and by distance from program location. A discussion of the advantages and disadvantages of these two methods is in Section 6. On the whole, mapping by geopolitical unit appears to be more informative than mapping radii from program locations. The maps in this section and the next section use these geopolitical units.

Figure 4-12 is a map showing the total possible service area of all programs combined, without regard for intervention type, risk population, race/ethnicity, or geographic unit. Any geopolitical unit that was identified by any program as part of its service area is shaded. This provides a general picture of where some gaps in services might exist. As noted earlier, these data represent only programs supported by CDC funds. Programs supported by other sources may provide prevention services in some areas not shaded on the map.

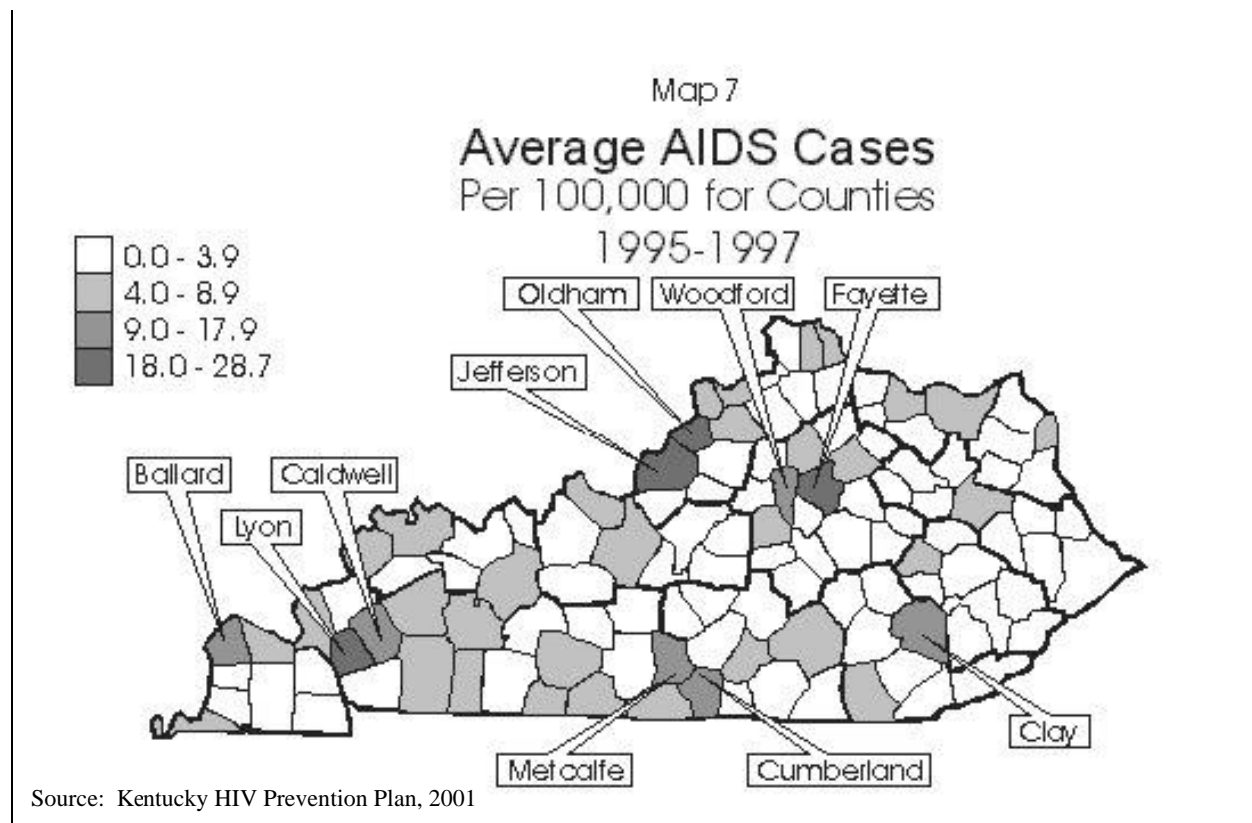
Figure 4-12. Total Service Areas of all HIV Prevention Programs Combined



Some states stand out because services do not appear to be widespread. Kentucky is one of them. It has five CBOs (three in Louisville, one in Lexington, and one in Paducah), and four of them responded, so there is probably some validity to the large gap that shows up on the map. From July 2000 to June 2001, Kentucky reported 298 AIDS cases, with a rate of 7.4 per 100,000 population. (Kentucky does not have confidential HIV reporting.) Less than one-half of these cases (127) were from the Louisville MSA. The Figure 4-13 map of AIDS rates from earlier years (displayed below) suggests that prevention services are needed in additional Kentucky counties, and this is certainly indicated in Kentucky's 2001 HIV Prevention Plan, which includes recommendations for greater geographical distribution of programs, especially to rural areas.

Several of the southeastern states also appear to have large geographic gaps, although survey response rates are high in only South Carolina and Georgia. Georgia's AIDS rate is in the top 20 percent at 16.9 (CDC, 2001c). While 911 of Georgia's 1,385 cases in 2000–2001 were in the Atlanta MSA, Georgia's 1998–1999 HIV/STD report indicates that the Augusta Public Health District is also an area of concern (GDPH, n.d.). Not one of Georgia's 20 CDC-funded CBOs is located in Augusta. Iowa is another state with a high response rate and a large geographic area without coverage. However, Iowa's AIDS and HIV incidence rates are low, and much of Iowa is rural.

Figure 4-13. Kentucky County AIDS Rates, 1995–1997



It is beyond the scope of this study to analyze CBO and program distribution in all states; however, HIV prevention plans have been developed by many states and can be used to analyze within-state gaps in prevention services. References to these plans are contained in Appendix E. More localized analyses have been carried out for selected states.⁶ These are provided in Section 5.

4.5 National-Level Data Queries: Service Type, Risk Population, and Race/Ethnicity

Questions 1, 2, and 3 of the survey instrument asked about intervention type, risk populations, and race/ethnicity, respectively. Together, the three questions contain 21 response options. Respondents could check all boxes that applied. Table 4-4 provides information about the responses of CBOs to these questions. It should be interpreted as follows: “705 CBOs, i.e., 69.4 percent of responding CBOs, indicated that they provide individual-level interventions,” etc. This table indicates that the most common type of intervention is group level; the least common is prevention case management. Similar types of interpretations can be made for risk populations and races/ethnicities served.

The HIV prevention services database developed by RTI contains data for all of these responses. A nearly infinite number of queries can be performed on these data, and their results can be mapped. For instance, the database could be used to respond to the query, “Display the geographic service areas of all programs that provide individual-level interventions to African Americans,” or “Display the geographic service areas of all programs that provide street and community outreach to MSMs,” or, “Provide a list of CBOs that provide community-level interventions in Minnesota.”

It would be impossible to provide static maps of all possible query combinations here, as there are thousands of them. After consultation with CDC staff, RTI has mapped the results of single (univariate) queries of the items in Questions 1, 2, and 3. A full color set of these maps is provided in the *Prevention Services Atlas*. Shaded areas indicate geographic service areas. Small circles represent those programs that provide the queried service (e.g., programs that provide prevention and case management); triangles represent CBOs that did not respond to the survey. The locations of nonresponding CBOs may provide some insight as to whether there is actually a geographic gap in service provision or missing information.

These maps must be interpreted with caution. They display information about CBOs that responded to the survey and the geographic coverage that has been indicated for a particular prevention program. Survey respondents may have differing interpretations of service type definitions and perceptions of geographic service areas. These maps provide no indication of the level of need. Some programs (represented by small red circles) may appear to have no associated services areas; however, this is largely due to the scale of the map. Service areas that consist of ZIP codes or small cities/towns are unlikely to show up on national maps. In some cases, programs provide services to counties or other geographic areas that are in other parts of their state.

⁶ RTI worked closely with CDC project staff to select the study states. Decisions were based on geographic location, survey response rates, and availability of county-level HIV and/or AIDS data.

Table 4-4. Program Responses to Questions 1, 2, and 3

Prevention Services	Number	Percent
1. Intervention Type		
Individual level	1,579	52.1
Group level	1,802	59.5
Street and community	1,298	42.9
Prevention case management	522	17.2
Community level	855	28.2
Health/public information	983	32.5
Counseling, testing, referral	1,340	44.3
2. Risk Population(s)		
MSM	1,618	53.4
MSM/IDU	1,296	42.8
IDU	1,479	48.8
Heterosexual	2,077	68.6
Mother with/at risk	1,088	35.9
General public	1,601	52.9
3. Majority Race/Ethnicity		
African American	2,106	69.6
American Indian/Alaskan Native	355	11.7
Asian	353	11.7
Native Hawaiian/Pacific Islander	204	6.7
Hispanic/Latino	1,657	54.7
White	1,963	64.8
More than one race	579	19.1
Race unknown	156	5.2

4.5.1 Maps of Intervention Types

Question 1 asked CBOs to indicate which of the seven types of intervention services they provide. Geographic coverage of programs administered by responding CBOs is shown in Figures 4-14 through 4-20, in the same order as listed in the survey instrument. Figure 4-14 shows the service areas of all programs that provide individual-level interventions. This was the second most common intervention type among respondents. Large portions of the United States appear not to be covered by this intervention type, although triangles in Montana, Washington, and parts of the southeast identify areas with missing data. Of interest is the fact that areas with substantial numbers of CBOs that did not respond (e.g., Illinois, Oregon, Michigan, and Vermont) appear to have geographic coverage. These maps must be

interpreted with caution, however, because the database contains no information on the financial resources of CBOs or number of persons they serve. If these data had been collected, or are collected in the future, they could be linked to the GIS data and mapped.

Service areas of group-level interventions are shown in Figure 4-15. The overall patterns for this intervention type are similar to those in Figure 4-14, with a few exceptions: they show greater (i.e., statewide) geographic coverage in Nevada, Massachusetts, Mississippi, and Tennessee and less (i.e., not statewide) coverage in Oregon, West Virginia, Maryland, and Maine.

Fewer areas of the country have access to street and community outreach services, as indicated in Figure 4-16. This is particularly noticeable in the Plains and Rocky Mountain states and much of the southeast. Again, this map reflects responses of CBOs to the survey and the respondents' range of interpretations of intervention type and geographic coverage.

Prevention case management was the least common type of service provided, as indicated in Figure 4-17. This intervention is a client-centered one with heavy demands on providers. For the most part, it shows up in small geographic pockets, except in California, Maryland, West Virginia, and some of the northeastern states, where CBOs have indicated that they provide this intervention type statewide. In this map, more than in the others, the impact of nonresponses is obvious. Green triangles exist in many of the areas that show no services.

Geographic service areas of community-level interventions are shown in Figure 4-18. After prevention case management, this was the least common of the preventions provided by responding CBOs. The map indicates that there is greater geographic coverage for community-level interventions than for street and community outreach, but less than for individual or group-level interventions.

Health communication and public information services have the potential to be the most widely disseminated because they generally consist of hotlines and print or electronic media. Some CBOs provide this level of service to the population of an entire state and/or neighboring states. Only about 50 percent (511) of the CBOs had programs that provided this type of service, but nearly half of the states (23) are covered, as shown in Figure 4-19.

Figure 4-20 shows geographic areas where counseling, testing, referral, and partner notification services are provided. The geographic patterns are similar to those in Figure 4-19, except that there is not statewide geographic coverage in Alaska, Oregon, Wisconsin, Mississippi, and Michigan.

In summary, group-level interventions were the most common intervention type reported by respondents. As might be expected, the health communications/public information intervention type has the greatest reported geographic coverage. All seven intervention types are reported to have statewide geographic coverage in California, Hawaii, District of Columbia, Vermont, New Hampshire, and Rhode Island.

Figure 4-14. Individual-Level Interventions

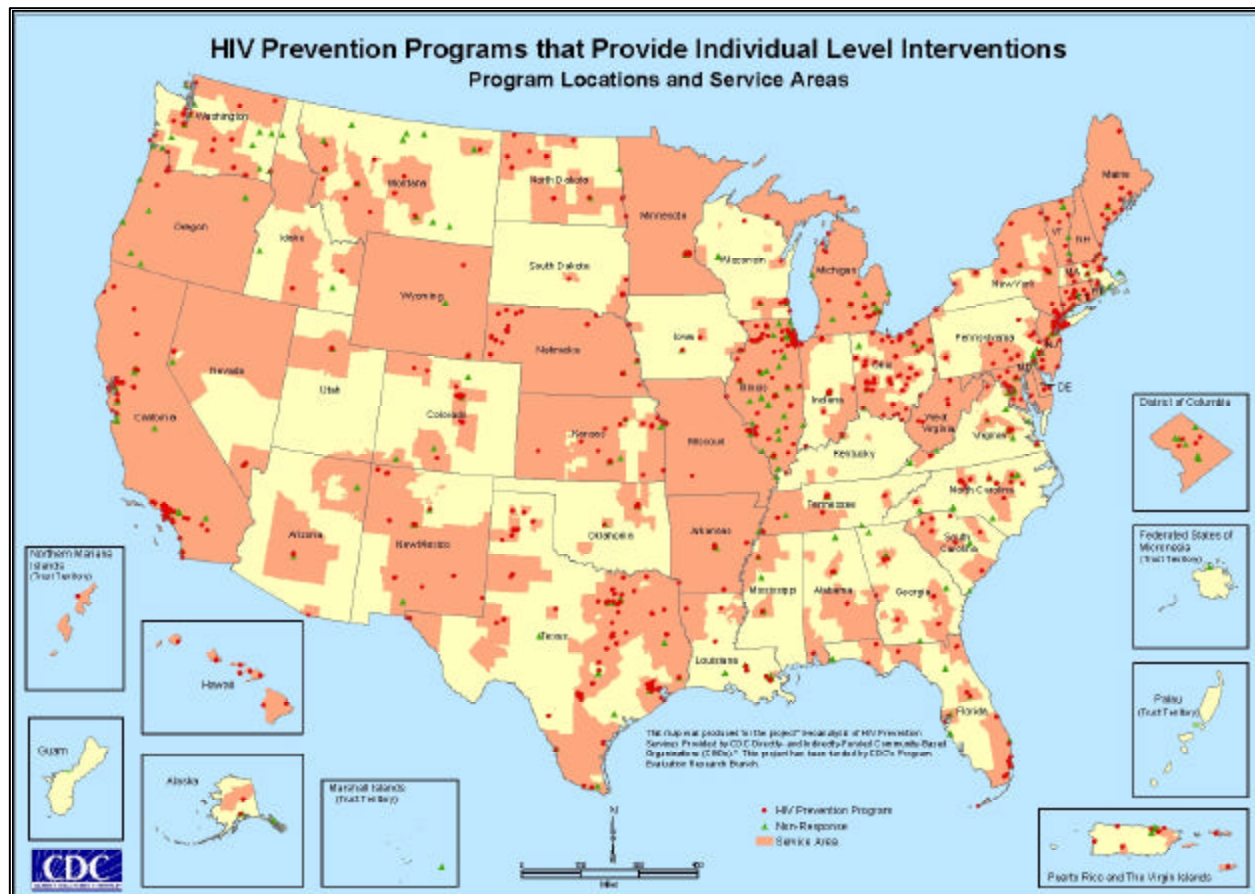


Figure 4-15. Group-Level Interventions

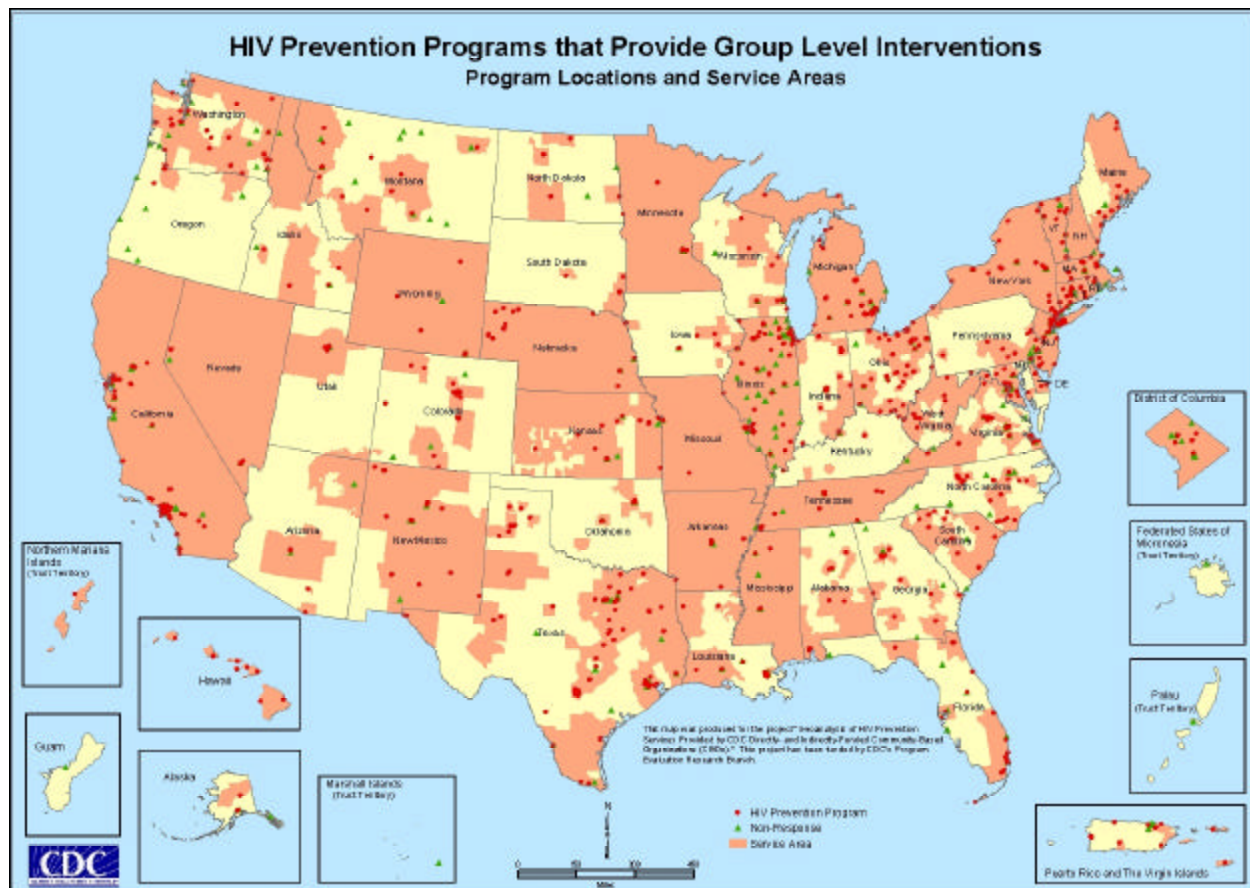


Figure 4-16. Street and Community Outreach

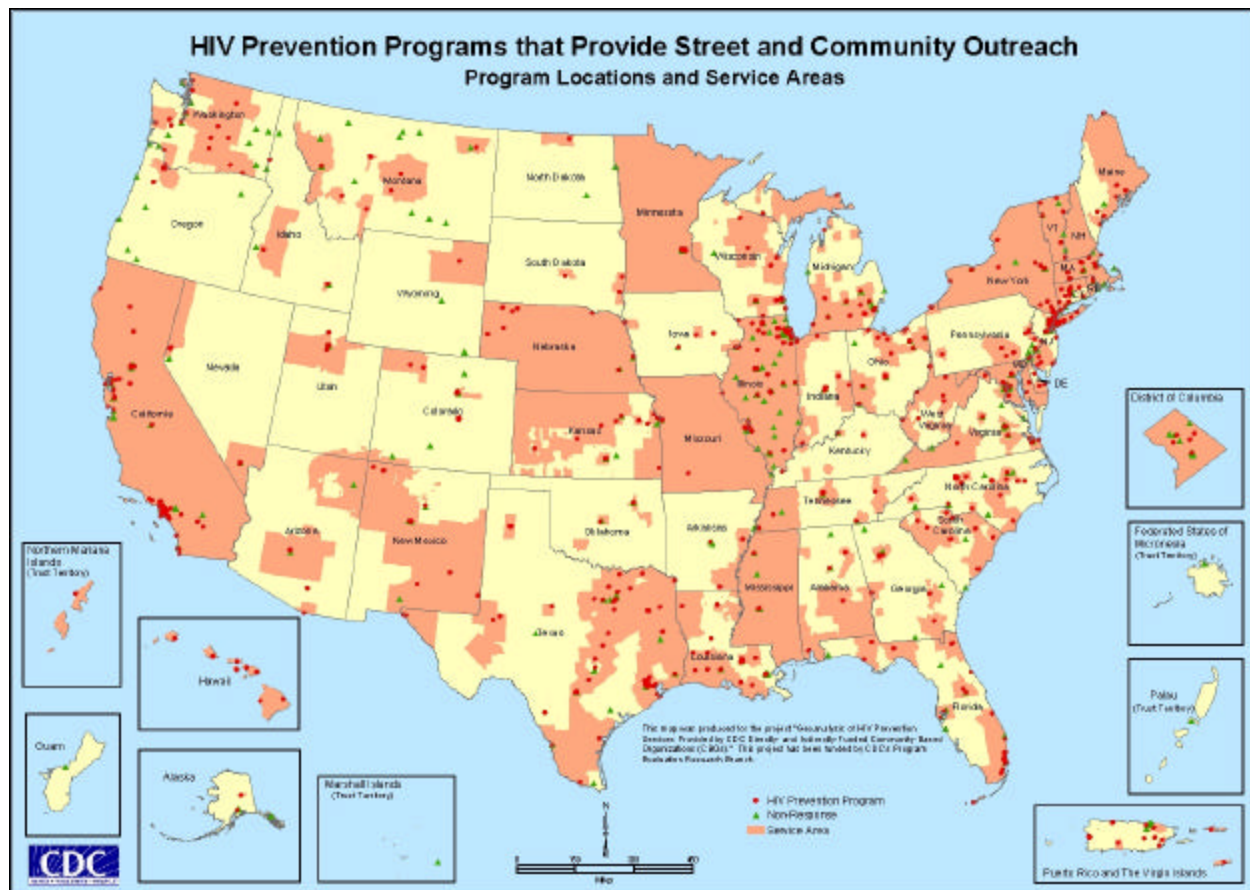


Figure 4-17. Prevention Case Management

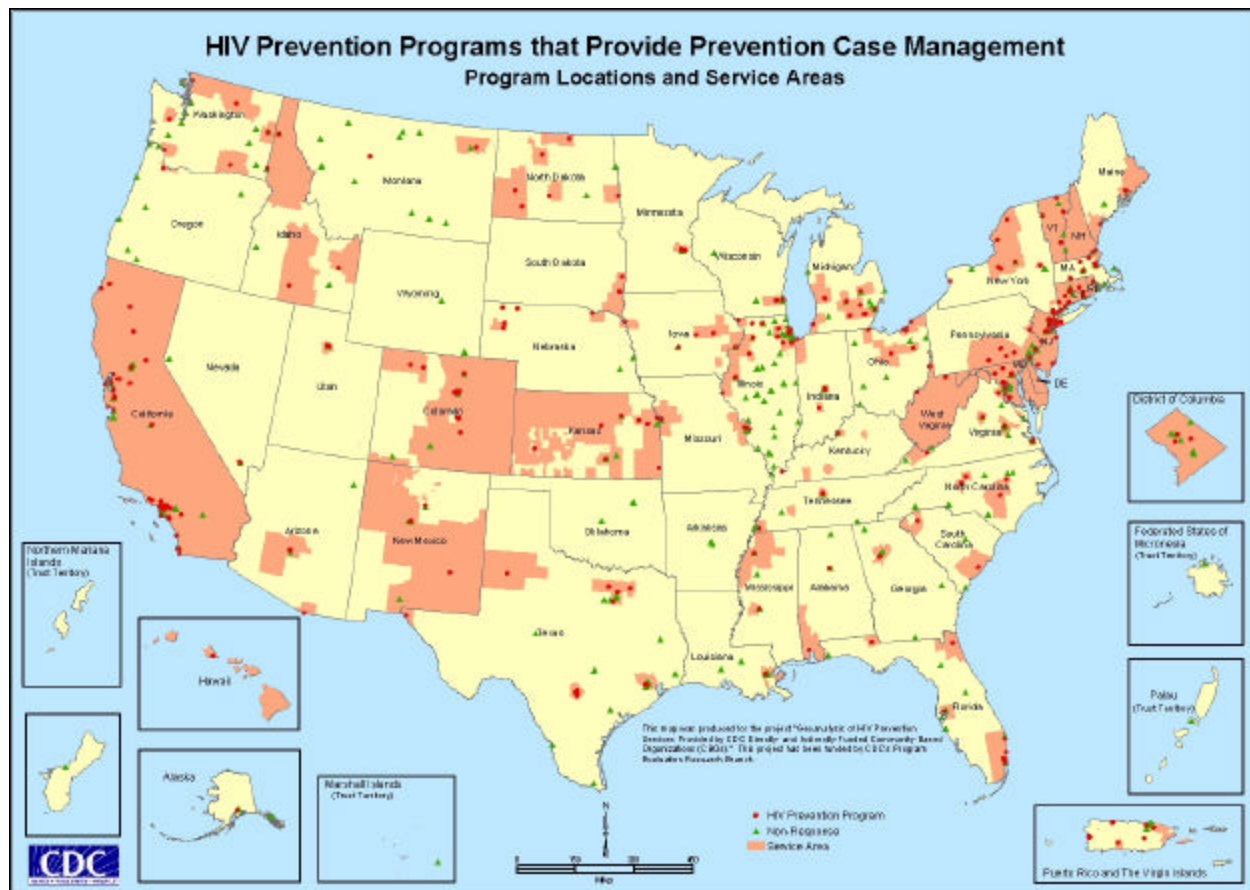


Figure 4-18. Community-Level Interventions

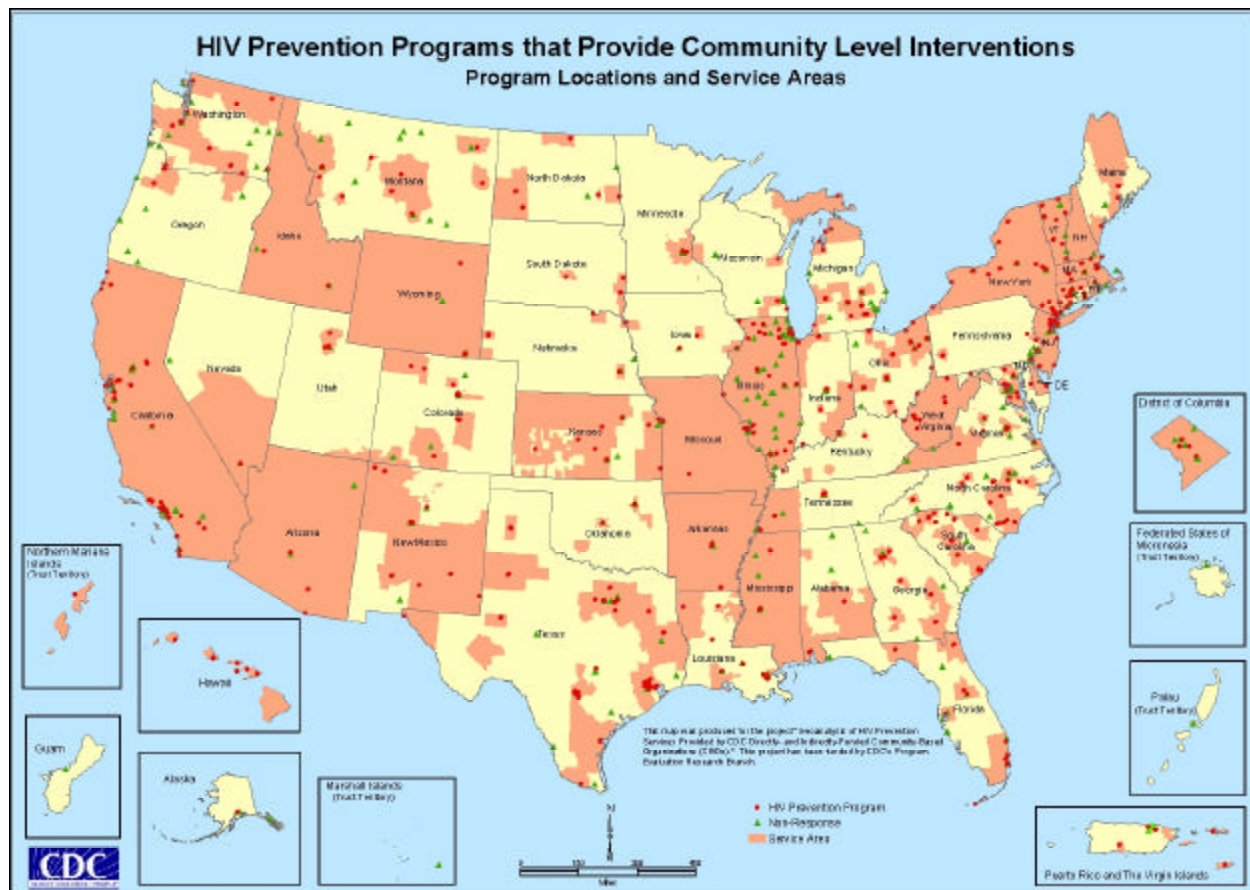


Figure 4-19. Health Communications/Public Information

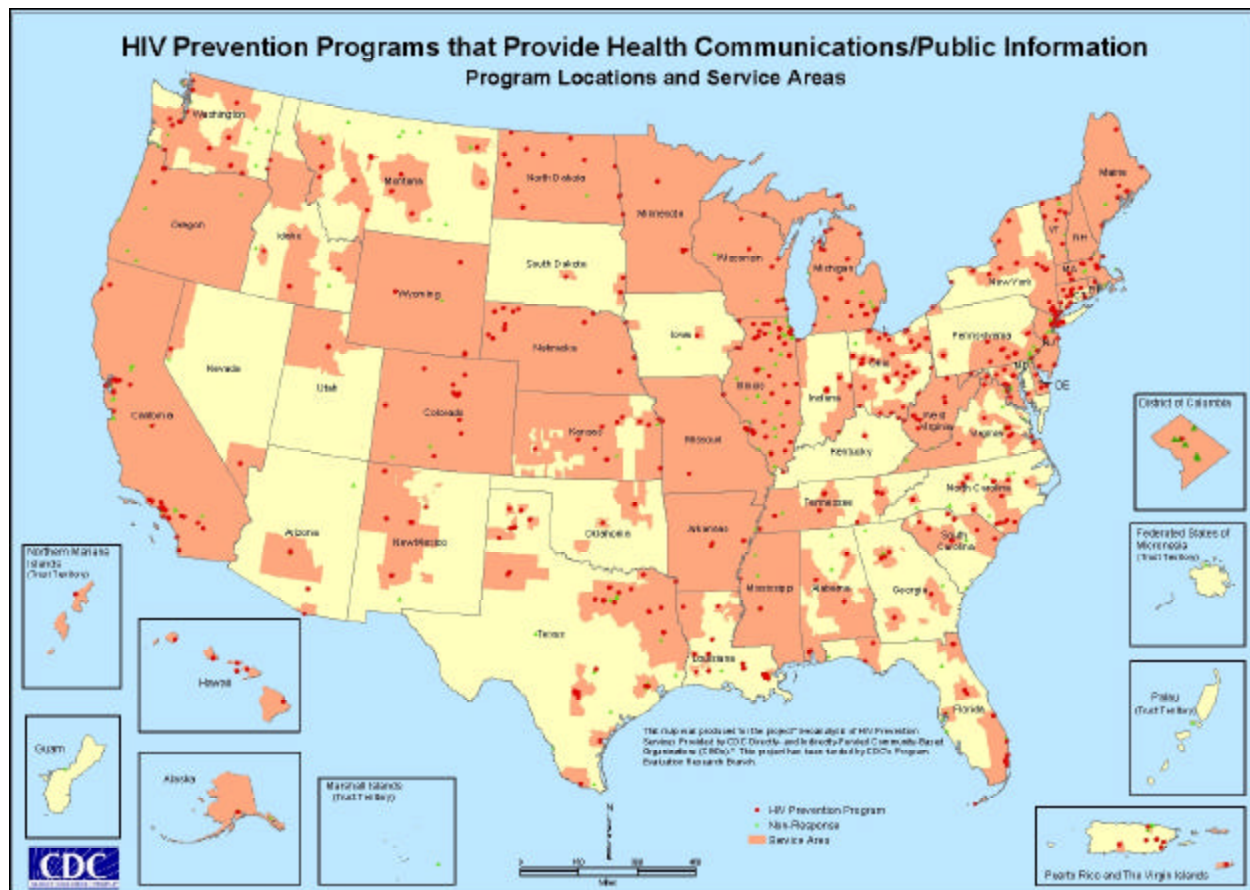
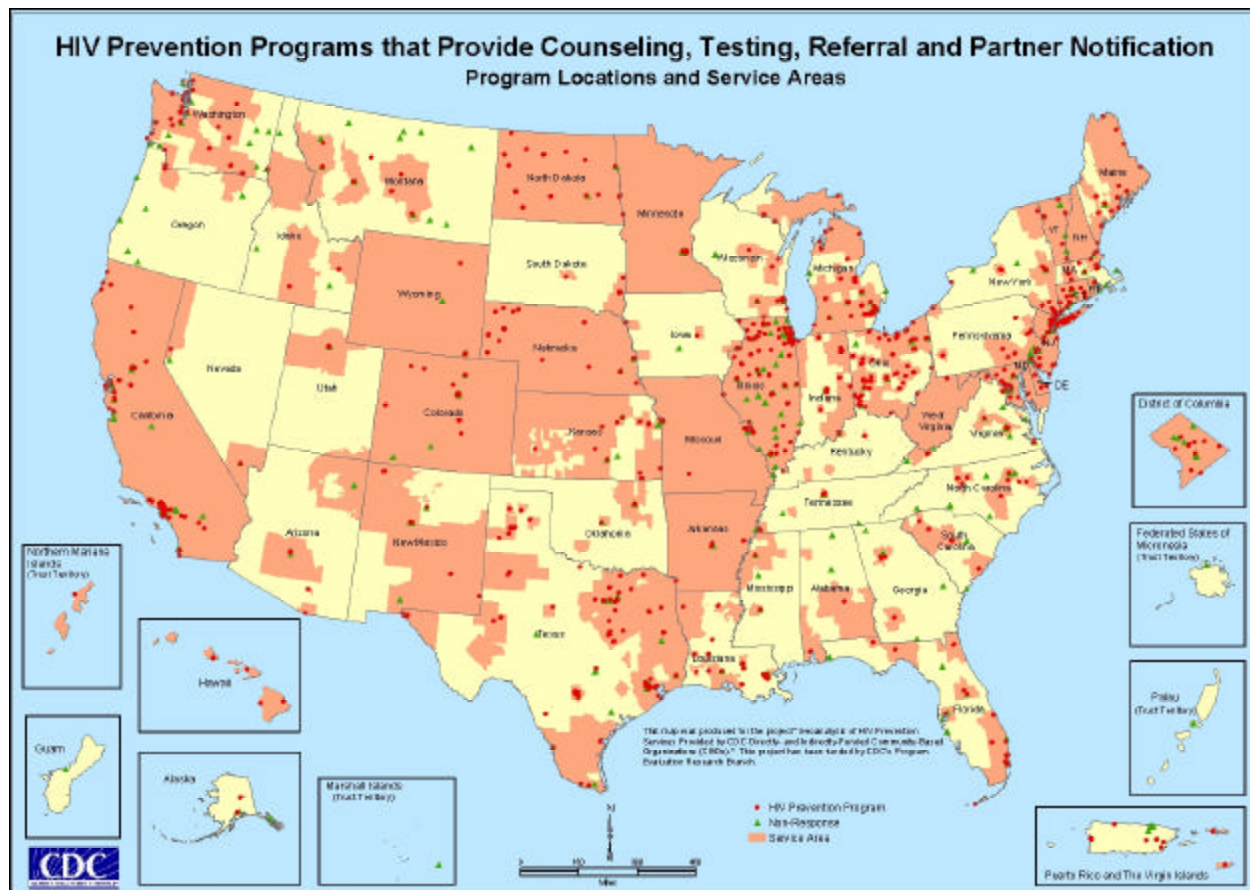


Figure 4-20. Counseling, Testing, Referral, and Partner Notification



4.5.2 Maps of Risk Populations

Question 2 contained six risk population categories. As shown in Table 4-4, the most commonly served risk group was heterosexuals; the least commonly served group was mothers with/at risk for HIV. Maps for all six risk populations are included in the *Prevention Services Atlas*. On the whole, there is less spatial variation among these maps than among maps of intervention types, so only three of the six maps are shown in this section.

The geographic service areas of programs that provide services to MSMs, MSMs/IDUs, and IDUs are fairly similar in distribution and are represented by the MSM map in Figure 4-21. Many states west of the Mississippi River, as well as the New England and northeastern states, appear to have statewide prevention services. The South, from Texas eastward, appears to have less geographic coverage. Service distributions for MSMs/IDUs and IDUs are similar, except for the following: (1) neither the MSM/IDU nor the IDU programs have statewide service areas in Illinois, Oregon, Arizona, Missouri, or New York; and (2) Hawaii is only partially covered for IDU programs.

Figure 4-21. MSM Risk Population

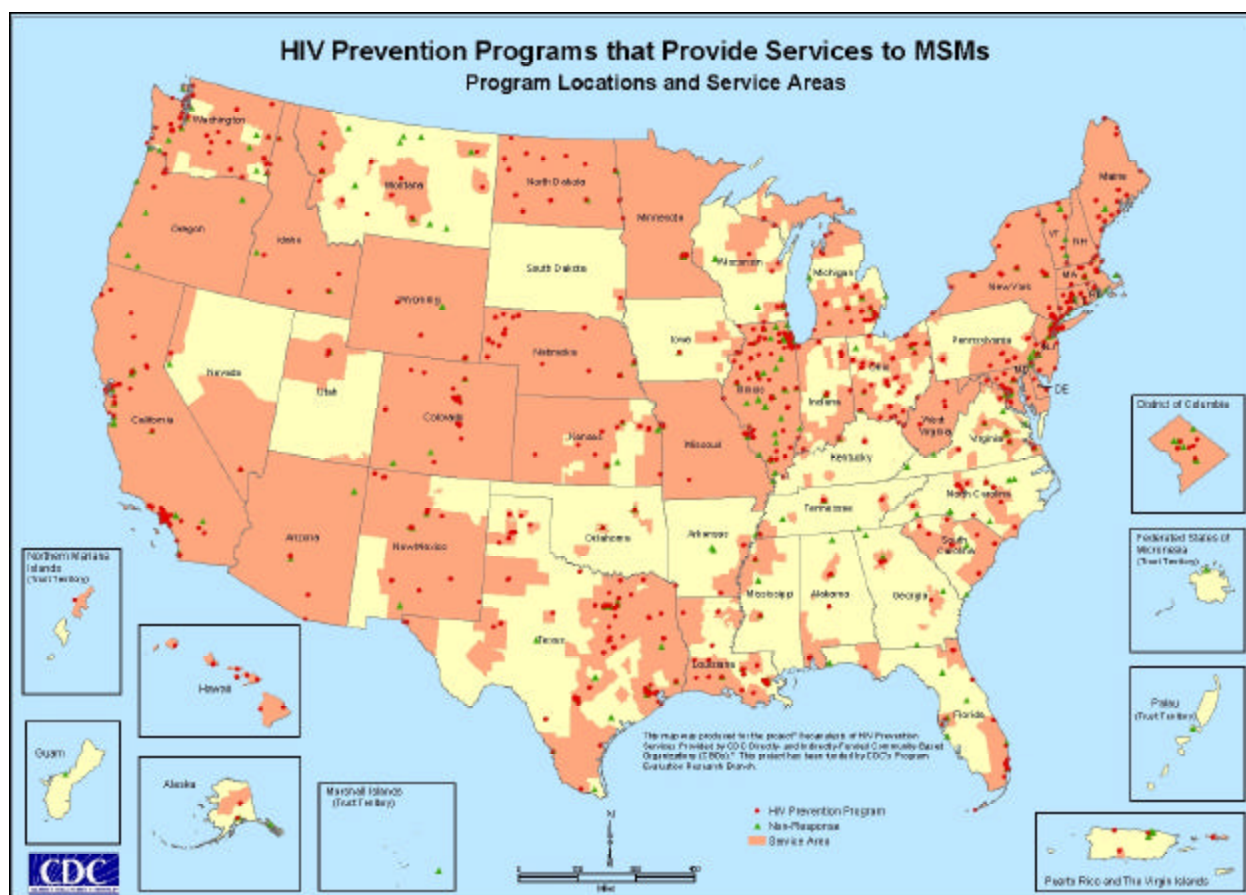
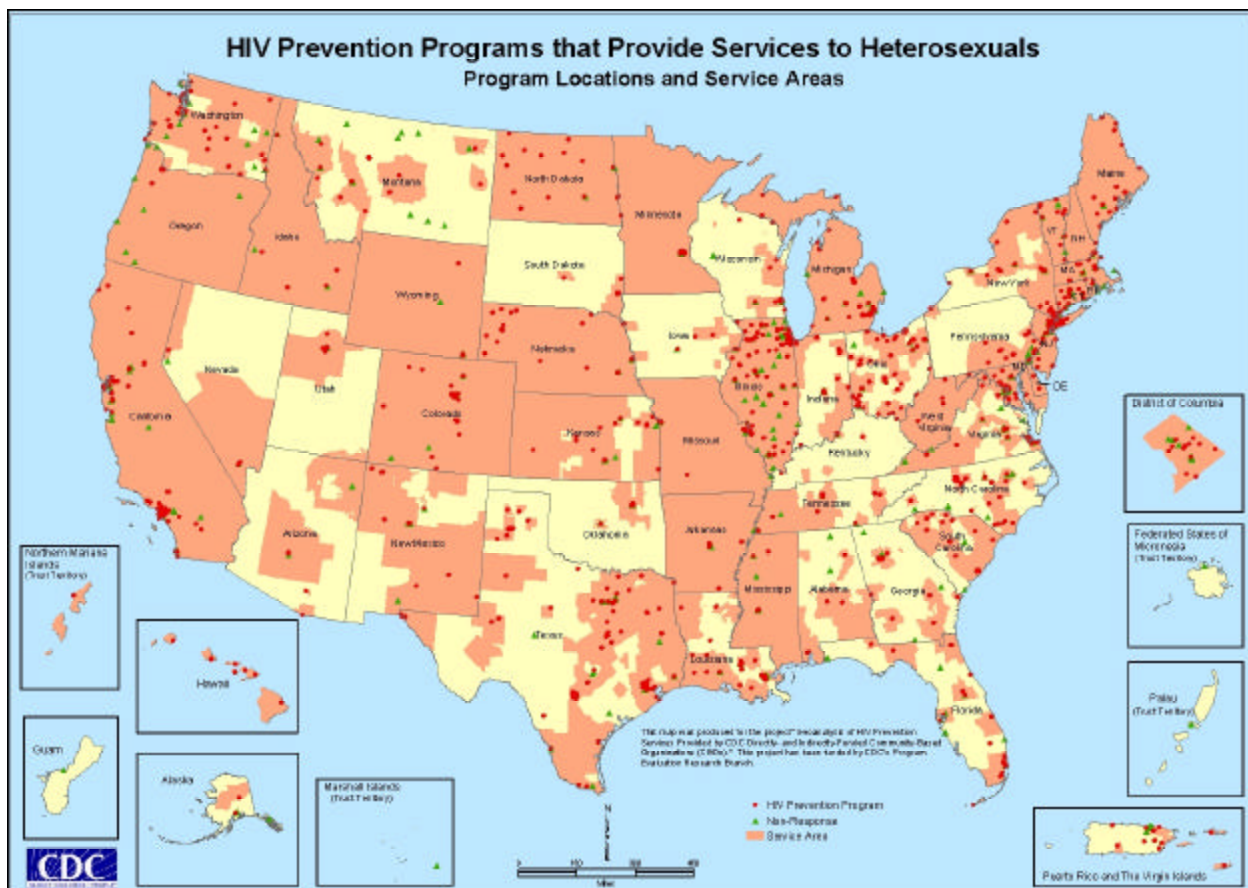


Figure 4-22 shows the distribution of services to heterosexuals. Nearly 80 percent of responding CBOs provide services to this risk population. Geographic coverage is more comprehensive than that of MSM coverage. In the West, the pattern of coverage is very similar to the coverage for MSMs (except for the lack of statewide coverage in Arizona), but in the central and eastern United States coverage also includes the entire states of Arkansas, Mississippi, and Michigan. New York state is only partially covered. Due to the reported statewide coverage in Arkansas and Mississippi, the lack of coverage in the south is not as dominant as it appears on the MSM map. The geographic pattern of services to the general public (map not shown here) is similar to that shown in Figure 4-22 except the pattern for the general public shows statewide coverage in Tennessee, Wisconsin, and New York and a lack of statewide coverage in North Dakota and Connecticut.

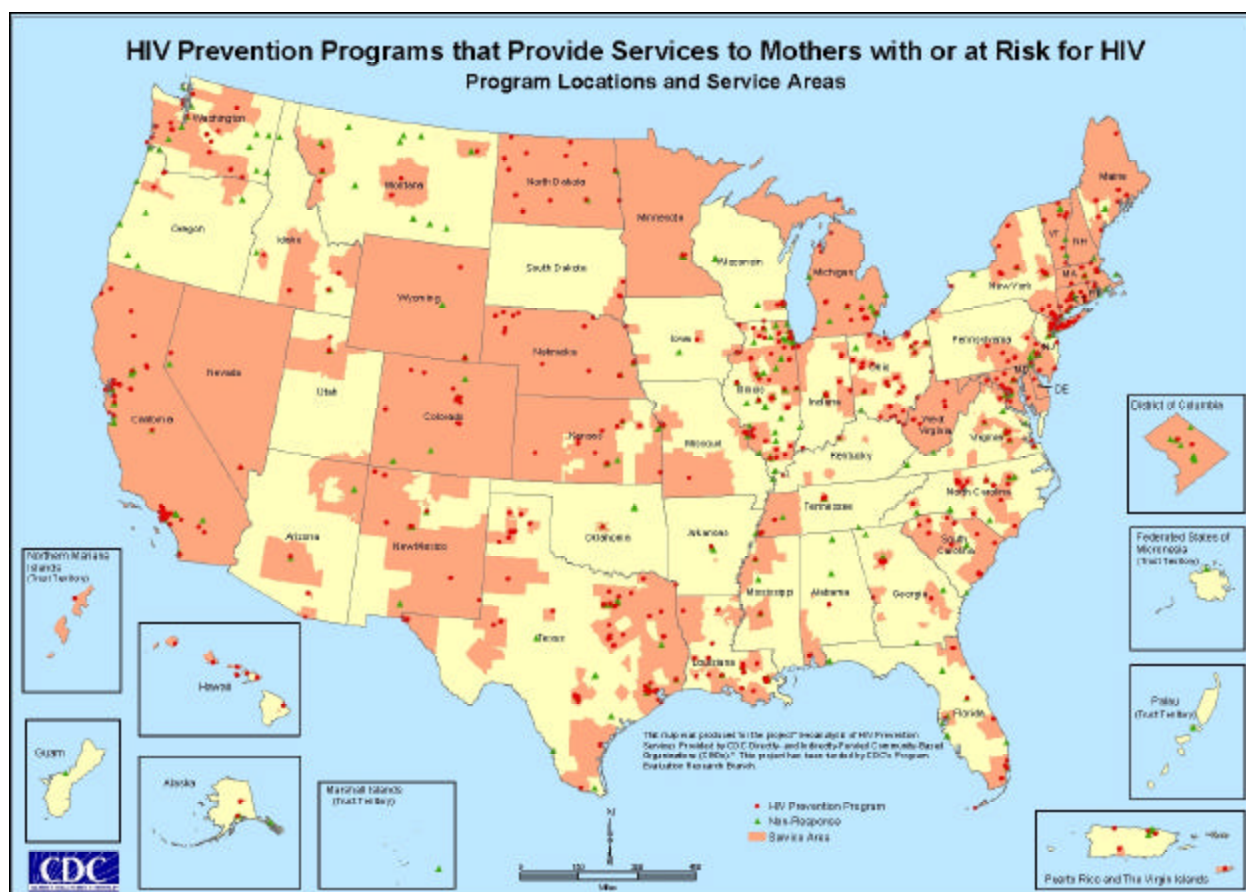
Figure 4-22. Heterosexual Risk Population



Only 51 percent of responding CBOs reported that they provided services to the mothers with/at risk for HIV risk population, and this is reflected in Figure 4-23. There are large geographic gaps in service provision throughout the East, South, and Northwest. In some cases, these areas coincide with the locations of nonresponding CBOs (e.g., Montana, eastern Washington, western Oregon, and pockets of the southeast).

In summary, statewide coverage for all six risk populations has been reported for 16 states, including the District of Columbia. On the whole, statewide coverage appears to be most lacking in the

Figure 4-23. Mothers with or at Risk for HIV



southeast, but whether this is a reflection of more precise delineation of service areas by southeastern CBOs or of gaps in coverage is not known at this time.

4.5.3 Maps of Race/Ethnicity

Question 3 was worded as follows: “Please mark the box or boxes that best describe the race/ethnicity of the majority of persons served by this prevention program. You may check more than one box.” Responses to this question are probably more ambiguous than responses to Questions 1 and 2 because of the way the question was worded. Although the question asked about the race/ethnicity of the majority of persons served, it may have been interpreted as asking about the race/ethnicity of any or all persons served. Some of the maps that follow indicate that this question may have been interpreted this way by some respondents. Interpretations of these maps must be made carefully.

Question 3 contained eight response options, which corresponded with specific race/ethnicity categories used by the U.S. Census. Geographic distributions of responses to the first six categories will be described here. Maps of the last two categories? more than one race and race unknown? are contained in the *Prevention Services Atlas* but are not discussed here. To aid in the interpretation of these maps, a smaller map inset showing population distributions, by state, is shown for each race/ethnicity

category, except for whites.¹ These map insets show population numbers, not percentages. For each of the maps, quantile distributions of the population variable were used to determine map class intervals, as reflected in the legend.

Figure 4-24a shows the geographic service areas of CBOs that reported that African Americans were among the majority of persons served by a given program. Some of the patterns are consistent with the African American population distribution in the United States (see Figure 4-24b); others are not. On the whole, the African American population in the northwestern United States is low, and the geographic coverage of services to African Americans reflects this. On the other hand, there are many states with low numbers of African Americans that have statewide coverage of certain HIV prevention services, including Arizona, Wyoming, Nebraska, North Dakota, Minnesota, West Virginia, Vermont, and New Hampshire. These queries, however, are univariate and do not include parameters for risk population or intervention type.

Probably of greatest concern are those states with large African American populations and less geographic coverage. This is most notable in the southeastern states (with the exception of Mississippi and Tennessee), where the African American population is not as concentrated in major metropolitan areas as it is in some of the northern states. If this map is compared with Figure 4-8, a similar picture emerges. The southeastern states all have low LQs, indicating a need for more services for African Americans. Of course, it will require CDC staff with access to the HIV Prevention Services database to carry out additional queries that include intervention type and risk population to determine whether this observation is correct.

¹ Source: Bureau of the Census, 2000.

Figure 4-24a. HIV Prevention Services to African Americans

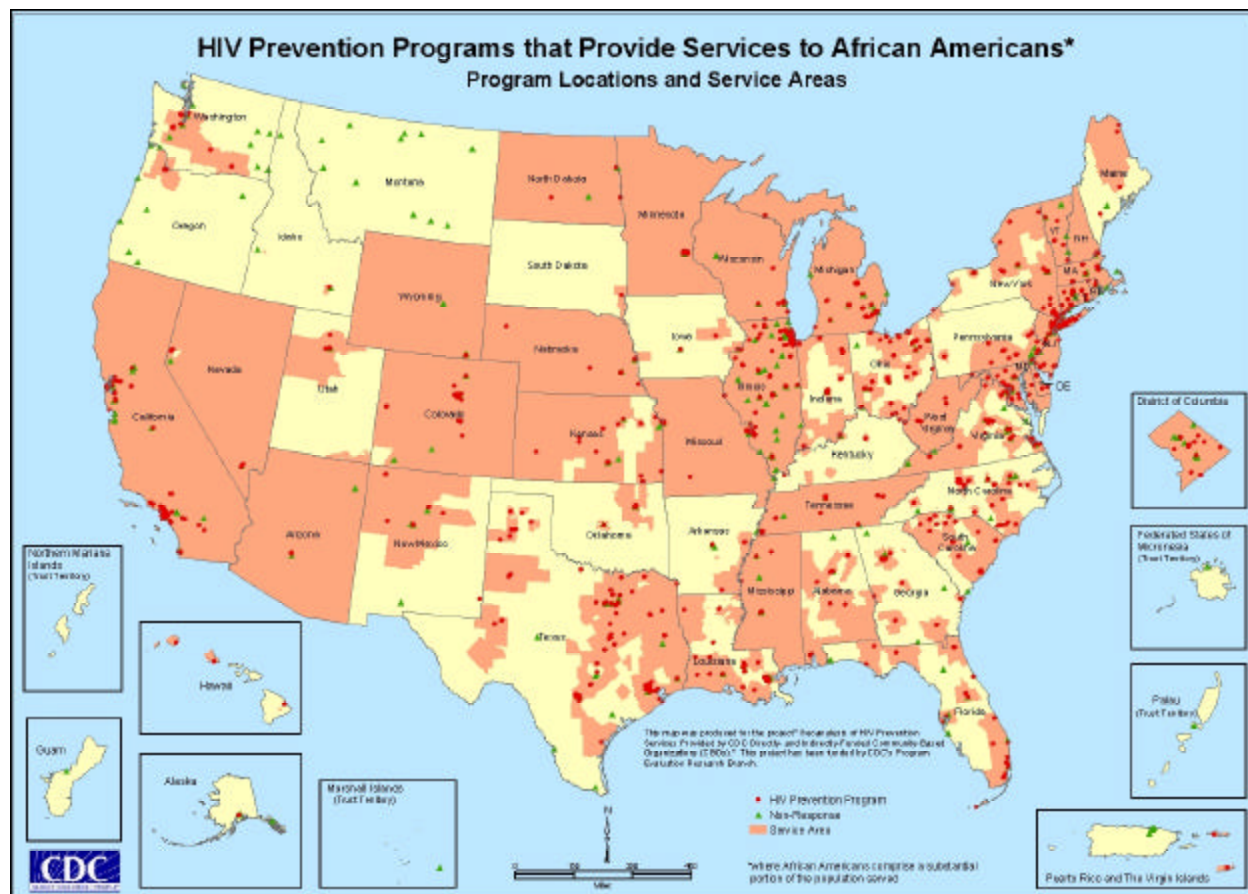


Figure 4-24b. African American Population by State



Figure 4-25a shows the distribution of services to American Indians or Alaska Natives. The general population distribution, by state, is shown in Figure 4-25b. The match between geographic service areas of HIV prevention services and state-level population distributions is closer than it was for African Americans. California and Arizona appear to have wide coverage, and large areas of New Mexico and Washington are also covered. In North Carolina, the largest numbers of American Indian residents are focused in the portion of the state where services are being provided. Oklahoma has a large Native American population, with foci in the northeastern and central portions of the state. Services are provided in the northeastern part of the state, but the CBO in the central area of the state did not respond. Oklahoma's AIDS rate is relatively low, at 8.7. The potential impact of nonresponding CBOs on geographic coverage is obvious on this map.

As is seen on this and the following maps, several states indicate statewide or broad area coverage for all race/ethnic groups. This is discussed in more detail at the end of the section.

Figure 4-26a shows the distribution of service areas for programs where Asians constitute a substantial portion of the population served. Figure 4-26b contains a map of Asian population, by state. Geographic patterns on the two maps do not correspond well, with the exceptions of California, Washington, and Illinois. New York and Pennsylvania appear to have good geographic coverage at the local level because Asian populations in those states are concentrated in New York City and Philadelphia. Compared with African Americans, Whites, and Hispanics, AIDS and HIV infections cases for Asians are very low (CDC, 2001c).

Figure 4-27a shows the geographic service areas of CBOs that reported Native Hawaiians and other Pacific Islanders (hereinafter referred to by the generic "Pacific Islanders") as being among the majority of persons served by one or more of their programs. State populations for this group are shown in Figure 4-27b. California is the state with the highest number of Pacific Islanders, and statewide geographic coverage is indicated. Other states with relatively high population numbers include Texas, Washington, and Utah. In these states, service areas are in major metropolitan areas, which is consistent with the Pacific Islander population distributions for those states. As in Figure 4-26a, coverage in the southeastern states is sparse, but this may be due to the existence of nonresponding CBOs.

Figure 4-28a displays service areas of HIV prevention programs that provide services to Hispanics, where Hispanics constitute a substantial portion of the population served. States with larger Hispanic populations, shown in Figure 4-28b, appear to have comprehensive geographic coverage: California, Arizona, New Mexico, Colorado, New York, and Texas. The pattern of coverage in Florida corresponds with the county-level distribution of Hispanics and Latinos in that state.

The population distribution of Whites mirrors that of the total U.S. population. It is not surprising, then, that the pattern of service areas in Figure 4-29 is nearly identical to the pattern in Figure 4-12, which shows the total service areas of all HIV prevention programs combined. The patterns on that map were described in Section 4.4. The only notable differences, at the national scale, are in Arkansas and Mississippi. These areas had statewide coverage in Figure 4-12, but are only partially covered on this map. As can be seen in Figures 4-28a and 4-24a, respectively, the statewide coverage in Arkansas is due to programs that serve Hispanics; in Mississippi, it is for programs that provide services to African Americans.

Figure 4-25a. HIV Prevention Services to American Indians or Alaska Natives

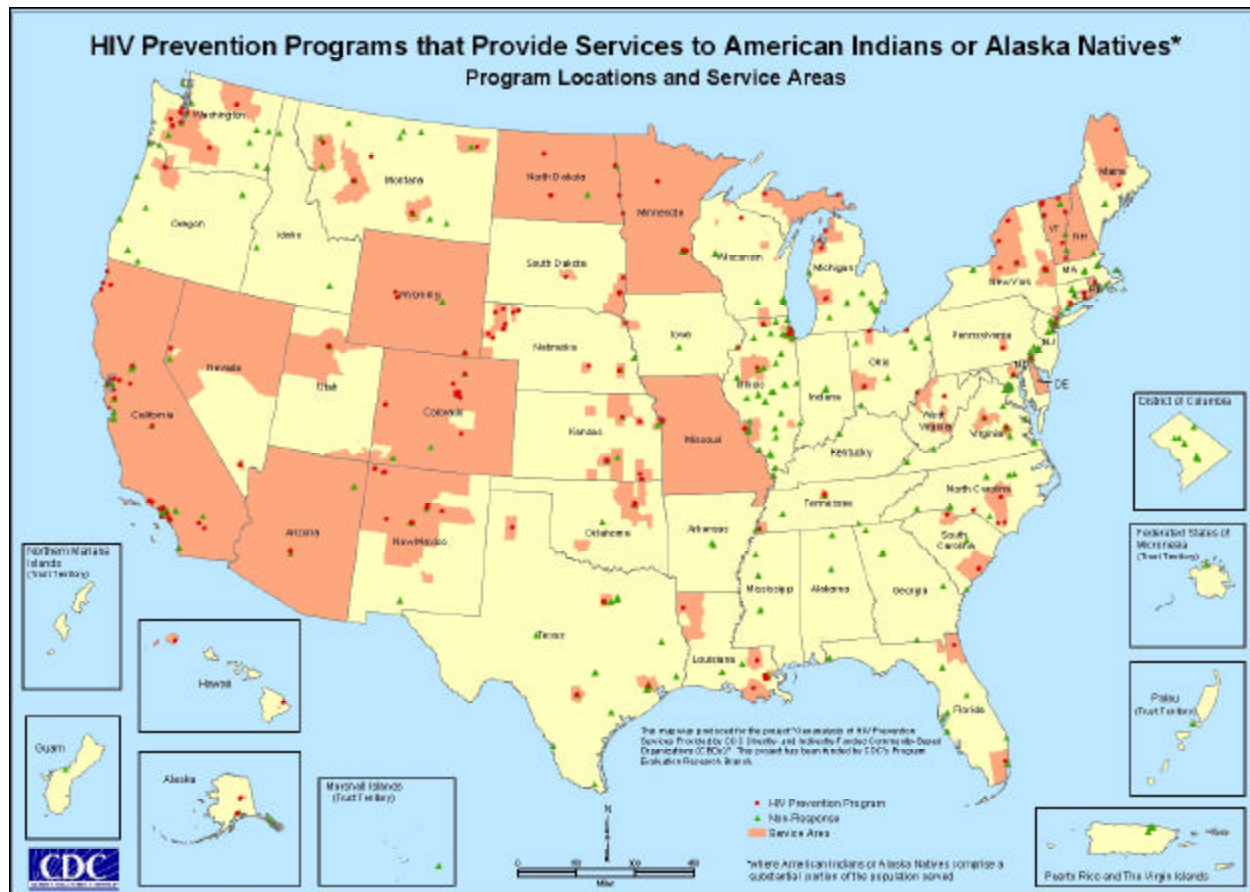


Figure 4-25b. American Indian or Alaska Native Population by State



Figure 4-26a. HIV Prevention Services to Asians

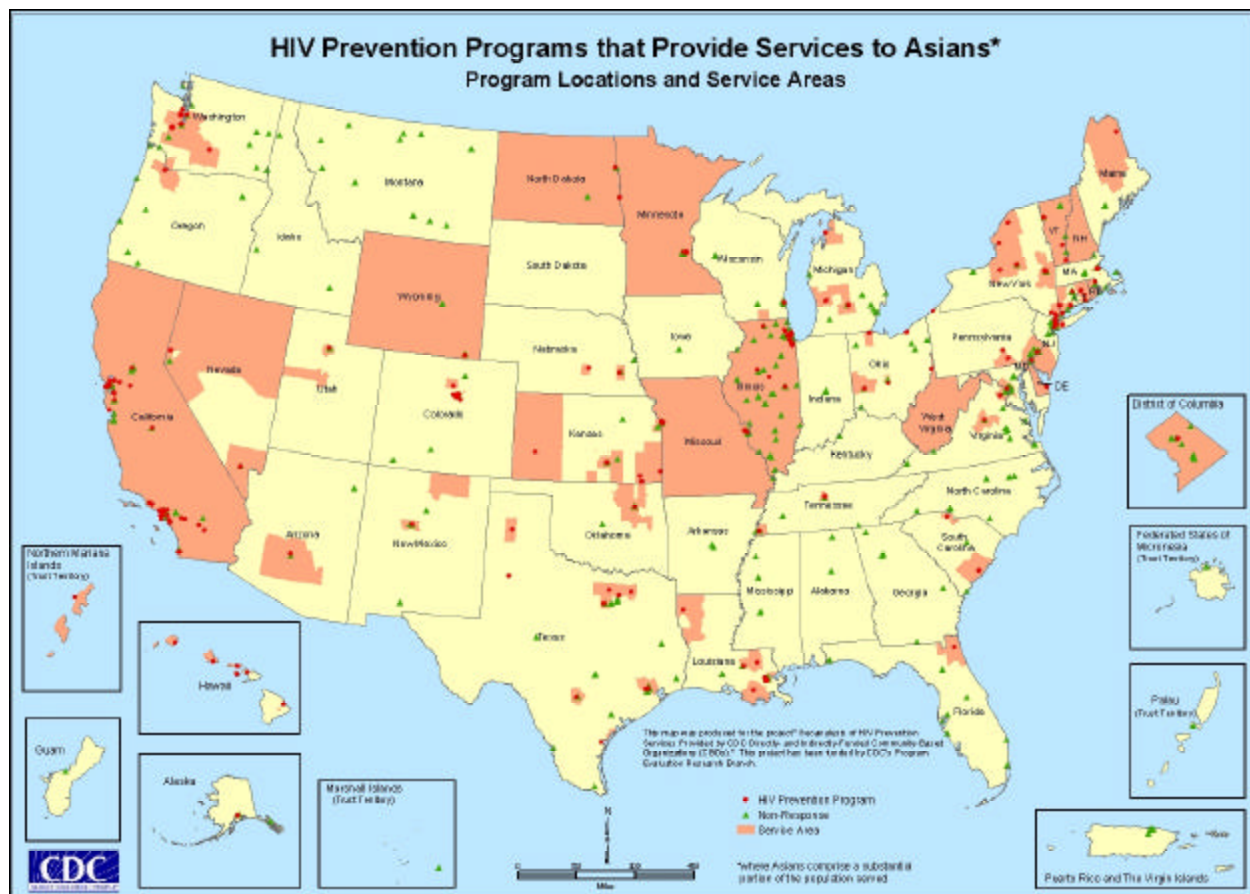


Figure 4-26b. Asian Population by State, 2000



Figure 4-27a. HIV Prevention Services to Native Hawaiians and Other Pacific Islanders

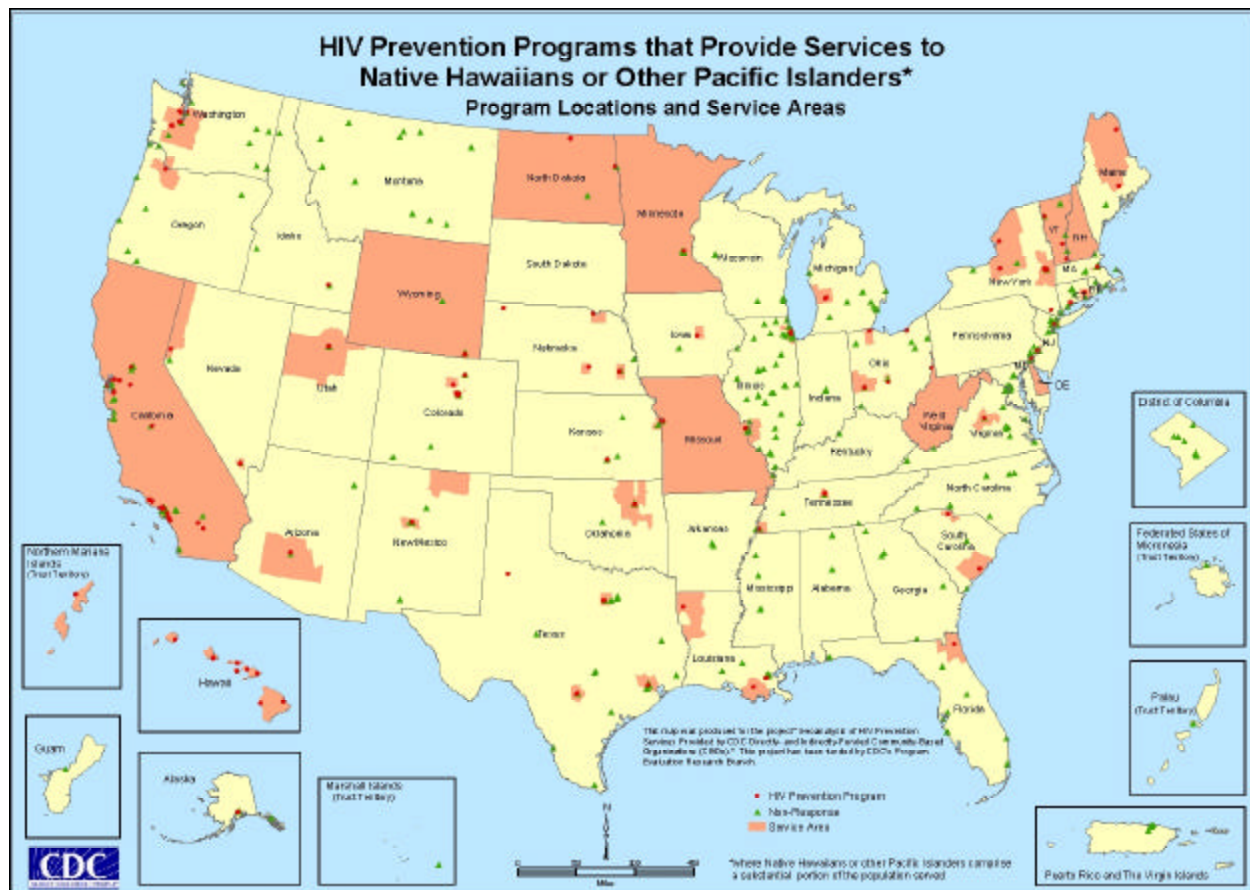


Figure 4-27b. Native Hawaiians and Other Pacific Islanders Population by State

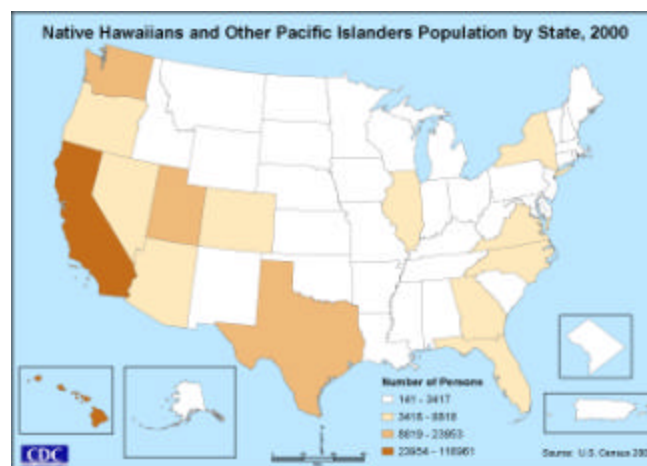


Figure 4-28a. HIV Prevention Services to Hispanics or Latinos

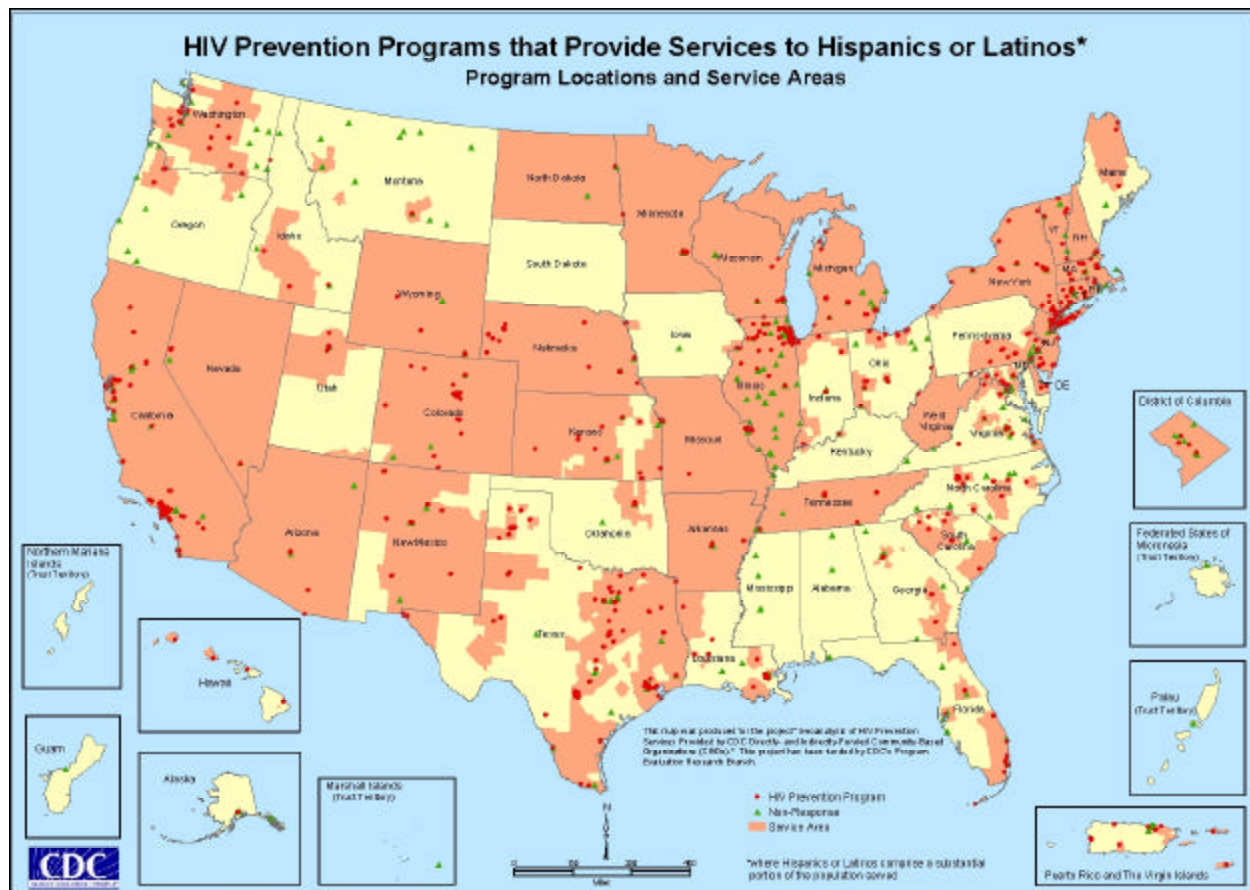
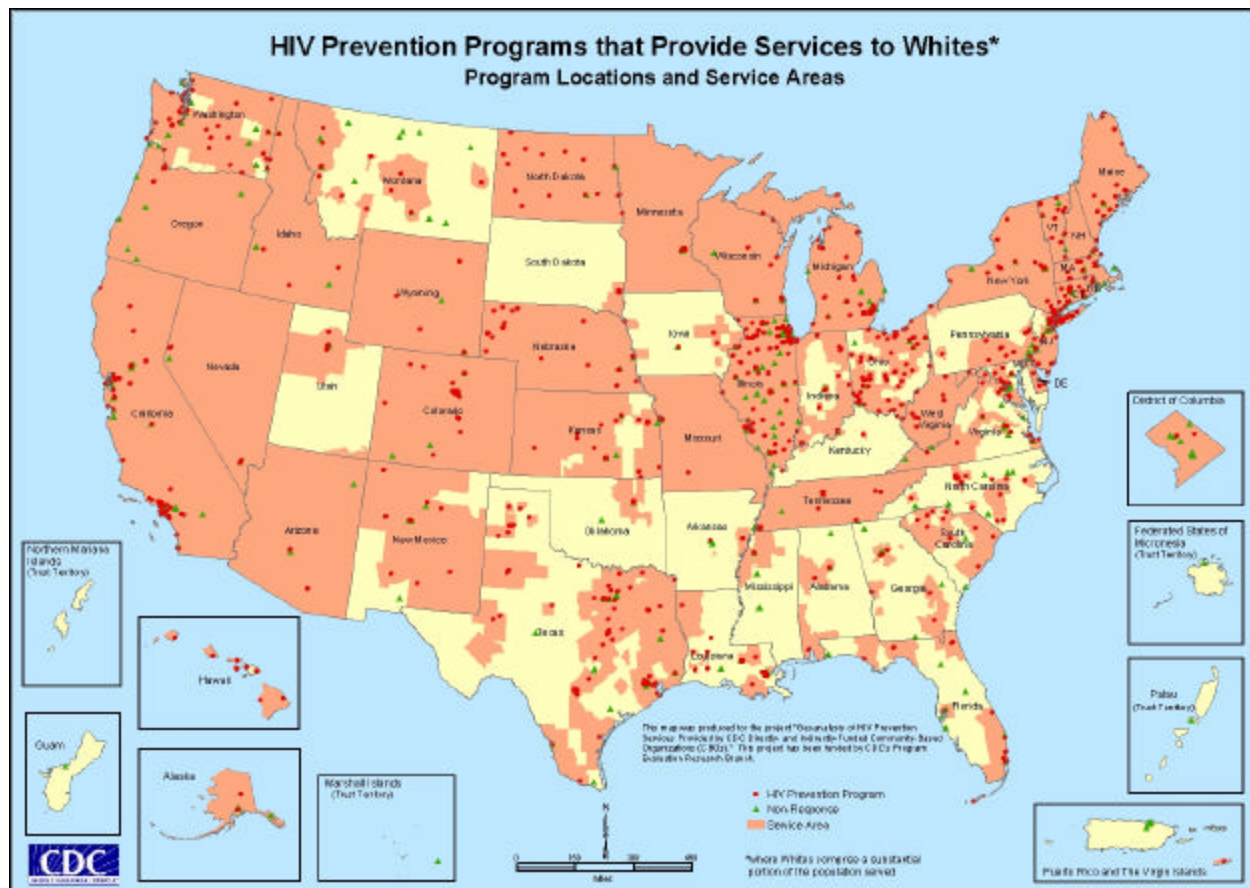


Figure 4.28b. Hispanic or Latino Population by State



Figure 4-29. HIV Prevention Services to Whites



While some of the service area patterns on Question 3 maps are consistent with spatial patterns of population distributions, others are puzzling. In several states, statewide or broad area coverage has been indicated for all six of the racial/ethnic groups described. These states include California, Wyoming, North Dakota, Minnesota, Missouri, Delaware, Vermont, New Hampshire, and Maine (northern portion). A query on the HIV Prevention Services Database indicates that 126 programs checked off all six of these boxes in Question 3. One must wonder if some of these, such as the CBO in Presque Isle, Maine, really serve all racial/ethnic populations. Surprisingly enough, however, the three northeasternmost counties of Maine do have all six populations represented in their Census 2000 counts. In Wyoming, North Dakota, Minnesota, and Delaware, the statewide coverage is reported by a single program. In Delaware, it is an HIV/AIDS hotline; in Minnesota, it is a public information/media campaign. In North Dakota, it is a confidential counseling and testing program.

RTI has attempted to show general patterns of responses to univariate queries. However, the examples cited in the preceding paragraph all point to the importance of asking additional questions of the data and using the dynamic HIV Prevention Services Database to find answers.

Local Analyses: Case Studies

5.1 Gap Analysis: What Does It Mean and How Can It Be Applied with GIS Technology?

One objective of this project was to conduct a *gap analysis* to identify geographic gaps in the provision of CDC-funded HIV prevention services. Many of the HIV prevention plans prepared by states include a section on need assessment and gap analysis (e.g., Kentucky HIV Prevention Community Planning Group, 2001; Florida HIV/AIDS Community Planning Group, 2001). Gap analysis has also been referred to as an “analysis of needs.”

The HIVAIDSTA.org Web site is a joint project of the Academy for Educational Development (AED) Center for Community-Based Health Strategies and the National Alliance of State and Territorial AIDS Directors (NASTAD) that provides links to HIV prevention community planning materials. In August 1999, AED and NASTAD produced *Assessing the Need for HIV Prevention Services: A Guide for Community Planning Groups*. One section describes recommended steps for carrying out a gap analysis and contains this quote by a community planning coordinator, which indicates that the procedures for carrying out gap analysis may not be well understood:

How gap analysis occurs has been a puzzle for a long time. We are trying to identify those populations at greatest risk, see gaps in information, see who we are failing and who should be receiving services (AED/NASTAD, 1999).

AED/NASTAD have identified eight major steps in conducting gap analysis. They recommend that these steps be carried out for every major target population:

1. List and review each target population identified through the epidemiologic profile (a precursor to gap analysis)—summarize HIV/AIDS data and risk behaviors.
2. Estimate total need for the target population—attempt to identify number of individuals who need services.
3. Indicate major differences between need and demand for services—identify groups with low demand.
4. Identify barriers to HIV prevention services.
5. Assess the suitability of available services for the target population—examine services in the context of which intervention strategies are most appropriate for specific target population.

5.0 Local Analyses: Case Studies

6. Estimate met need for the target population—estimate proportion or numbers of persons receiving HIV prevention services; identify geographic areas where services are being provided.
7. Identify the portion of the met need that CDC HIV prevention dollars are responsible for meeting.
8. Estimate unmet need for the target population—unmet need equals total need minus met need.

Although the document refers to the presentation of statistical data by target population and geographic area and Step 6 of the gap analysis recommends identifying geographic service areas, the document contains little guidance about what constitutes a “geographic area” (i.e., is it a county, a region?) or which methods could be used to identify geographic areas of concern. Many states have developed HIV prevention plans, some of which have incorporated gap analysis (Appendix E contains a list of examples). Although some of these plans include county- or district-level maps of HIV/AIDS data, they do not incorporate spatial data into their gap analysis. Among the states that conducted gap analysis or needs assessments are Kentucky and Florida.

The Kentucky HIV Prevention Plan (Kentucky HIV Prevention Community Planning Group, 2001) includes a needs assessment and gap analysis. The gap analysis includes general discussions (usually a paragraph in length) of service needs in three major regions, and notes the need for services in rural areas, but includes no maps or spatial analyses. (Earlier sections of the prevention plan are populated with a series of informative maps, tables, and graphs.)

Florida’s 2001–2003 HIV/AIDS Prevention Plan (Florida HIV/AIDS Community Planning Group, 2001) contains a needs assessment/gap analysis section that addresses seven target populations and five other populations of concern. This section does not include any discussion of geographic areas; however, priority target populations were ranked earlier in the document by community planning partnerships that correspond to multicounty geographic areas, so some of these data could be examined in a geographic context.

The state of California carried out a spatial study of HIV/AIDS surveillance data, but this study is not a gap analysis. The potential is great to enhance the HIV/AIDS gap analysis methodology to incorporate GIS technology and spatial analysis, but very little has been written about this aspect of gap analysis. For GIS analysts, “gap analysis” typically refers to ecological gap analysis, which is a geographic approach that uses GIS technology to identify spatial gaps between areas that are rich in biodiversity and areas that are managed for conservation. RTI believes that the methodology developed for ecological gap analysis has potential applications for the identification of gaps in health service provision.

Ecological gap analysis is a well-known and well-developed methodology that uses GIS to examine the spatial distribution of plant and animal species to identify areas rich in biodiversity and compare these areas to the distribution of biodiversity management areas. The concept of a gap is a “lack of representation or under-representation of a plant community or vertebrate species on the lands that are being managed for conservation” (USGS, 1993). Although the purpose of gap analysis is to identify gaps or areas that are not protected, GAP is also an acronym for “Geographic Approach to Planning.” The gap

analysis methodology was developed in the 1980s and its use is widespread, not only in the United States, but also in several other countries.

Gap analysis, in the ecological context, involves the following steps:

1. Map the vegetation (land cover) of the dominant plant species, using satellite imagery.
2. Map predicted distributions of vertebrate species. This step requires extensive knowledge and information about the range of the species, specimen collection, and habitat affinities.
3. Map land ownership and assign it to one of four levels of stewardship, Level 1 indicating the greatest amount of protection.
4. Use GIS overlay analysis to intersect the vegetation and animal species maps with the land stewardship maps. The result is a series of statistics used to generate tables that indicate how well represented each element (e.g., vertebrate species, vegetation alliance) is in the top two (i.e. “protected”) land stewardship categories.

These four steps can be used to determine what percentage of species- or vegetation-rich areas lie on lands that are protected and can indicate potential areas for the establishment of additional conservation lands.

The concepts and methods employed in ecological gap analysis can be used in a public health services context. Instead of mapping vertebrate distributions of vegetation and vertebrate species, maps of risk populations, disease rates, or need for services can be created. GIS overlay analysis can then be used to intersect these maps with geographic service areas of health care providers and identify where potential gaps in service provision exist. Thus, a *health services gap analysis* could be carried out with the following steps:

1. Map the “unmet” need for services for a given target population. This step may require cartographic modeling of certain population distributions and known risk factors.
2. Map the geographic service areas of programs that provide services to specified target population.
3. Use GIS overlay analysis to intersect the maps of unmet need and existing service areas.

5.2 Florida Case Study

The potential of combining the gap analysis procedures used in HIV/AIDS community planning (and outlined by AED/NASTAD) with GIS technology is demonstrated using the state of Florida as an example. Florida is an ideal candidate for this type of analysis because the Florida HIV/AIDS Community Planning Group has thoroughly identified priority target groups for specific geographic regions of the state. In addition, Florida’s overall response rate to the survey was 74.4 percent, and HIV/AIDS data were available electronically in Excel format.

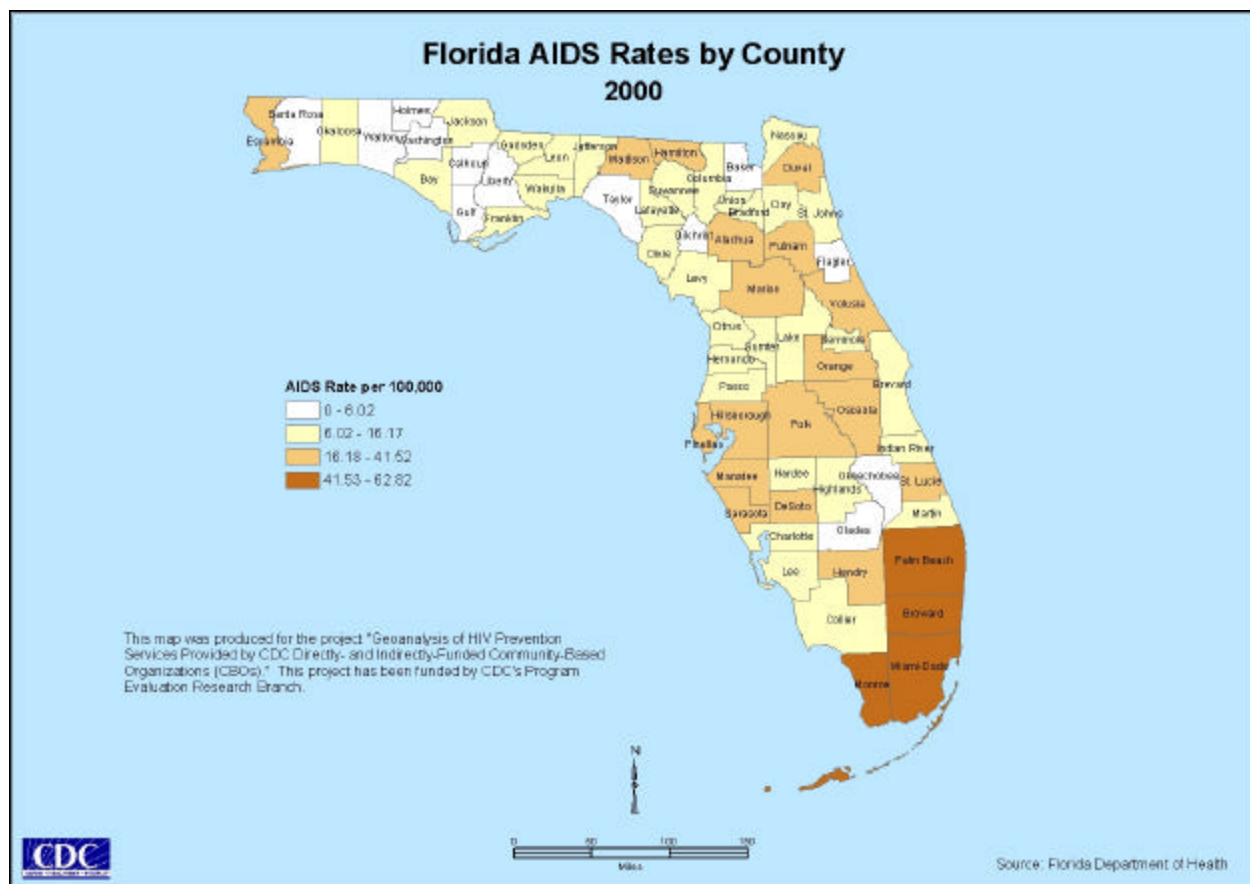
5.0 Local Analyses: Case Studies

5.2.1 Epidemiologic Profile

At the end of 2000, Florida ranked third in the nation in the number of cumulative adult AIDS cases and second in cumulative pediatric cases. Florida accounts for about 10 percent of the nation's cumulative total adult cases and 15.5 percent of the nation's cumulative total pediatric cases. About 57 percent of Florida's total cumulative adult and pediatric AIDS cases are now known to be dead. For populations living with HIV/AIDS, Florida has a disproportionate share of the nation's total: 12.5 percent of adult and 14.6 percent of pediatric AIDS cases, but less than 6 percent of the nation's total population (CDC, 2001c; FDOH, 2002).

The Florida Bureau of HIV/AIDS estimates that there are now about 82,500 persons living with HIV infection, including some who may not be aware of their infection. The epidemic has diffused in the past 20 years from six distinct urban epicenters. These six urban areas accounted for about 84 percent of the 32,504 persons living with AIDS in December 1999, which leaves a remaining 16 percent in less urban and more rural areas (FDOH, 2002). The fact that the epidemic is no longer a uniquely urban phenomenon suggests a need for redistribution of prevention resources. The county distribution of AIDS rates is shown in Figure 5-1.

Figure 5-1. Florida AIDS Rates by County, 2000



In the six urban epicenters, African Americans constitute at least 32 percent of infected individuals, but less than 20 percent of the total population; thus, the prevalence among African

Americans is higher than in other population groups. In the West Palm Beach area, African Americans account for 65 percent of the infected population but only 12 percent of the total population. Statewide, as of December 2000, African Americans constituted 45 percent of cumulative AIDS cases, 59 percent of all HIV cases, but only 13 percent of the total population. By contrast, Hispanics constituted 12 percent of Florida's population, but 15 percent of cumulative AIDS cases through December 2000. We can conclude that, in Florida, the prevalence among African Americans is much higher than their population proportion, while the prevalence among Hispanics is only somewhat higher and the prevalence among Whites is lower than their population proportions.

More than any other racial/ethnic group, African Americans tend to be diagnosed with HIV within a month of developing AIDS and die within a month of the AIDS diagnosis, indicating poor access to early testing and treatment. HIV/AIDS is the leading cause of death for African American men and women aged 25-44 years. Among African American women, injection drug use or sexual contact with a male injection drug user account for 30 percent of all AIDS cases reported through 1999. African American women with heterosexually acquired HIV are the fastest growing group with AIDS (FDOH, 2002). The risk of AIDS and HIV was higher among Florida's African American population in 2000 than in the United States as a whole (in 1999), partly because of the higher incidence among African American women.

MSMs are a significant population in the epidemic, regardless of age, race/ethnicity, or residence. This behavioral risk group accounts for the largest accumulated number of AIDS cases and, most likely, the highest prevalence of HIV infection. The number of new AIDS cases seems to be falling for this risk group, but this does not necessarily mean that the incidence of HIV infection is dropping.

Among females diagnosed with AIDS in Florida, 25 percent attributed infection to intravenous (IV) drug use and 45 percent attributed it to heterosexual contact. In Florida, women accounted for 18 percent of all reported AIDS cases in 1991; this proportion has risen steadily over time to about 22 percent by the end of 2000 (FDOH, 2002). African American women constituted the vast majority of female AIDS cases (72%) followed by Whites (18%) and Hispanics (10%). In the United States as a whole, the proportion of women with AIDS is also rising, but the demographic distribution across race/ethnicity is different than in Florida. In the United States as a whole, a smaller proportion of female AIDS cases are among African Americans (57%) and Whites (23%) with a larger proportion among Hispanics (20%).

Geographic variation by exposure category is considerable in the six urban epicenters in Florida. The variation in IV drug use is small across areas as compared with MSM and heterosexual contact. These figures are not robust, because the proportion with "no identifiable risk/other" varies considerably across areas, from 12 percent in nonurban areas to 46 percent in the Miami region. The state is working to improve reliability of these data in future surveys (Florida HIV/AIDS Community Planning Group, 2001). But the data that do exist suggest that modeling of variability at the local area may be fruitful in predicting regional risk.

5.2.2 Geographic Analysis

For HIV/AIDS prevention purposes, Florida counties have been grouped into a number of community planning partnerships. Because these partnerships are essentially multicounty regions, geographic analysis of partnership data is both feasible and useful. Each year, the Florida Bureau of

5.0 Local Analyses: Case Studies

HIV/AIDS provides each partnership with a specific epidemiological profile. In 1999, the Florida HIV/AIDS Community Planning Group developed a methodology for prioritizing groups of individuals for HIV prevention efforts. This methodology involves the use of a prioritization instrument, the *Priority Setting Worksheet*, that helps each partnership assess the needs of the local population for HIV/AIDS prevention.

A series of data sets is used to rank each of Florida's 18 target populations. These contain data about HIV and AIDS cases and epidemiologic trends, prevalence of risk behavior and riskiness of behavior, gap analysis, barriers to care, size of the population, and disproportionate impact of HIV/AIDS. For each of the 17 partnerships (i.e., geographic regions), each of the 18 priority populations is given a ranking. The maximum possible ranking for any priority population is 100. The rankings of each of the 18 priority populations are then averaged over the 17 partnerships to identify primary target groups for the state of Florida. In the *State of Florida 2001–2003 HIV/AIDS Prevention Plan* (Florida HIV/AIDS Community Planning Group, 2001) the following seven primary target groups were identified:

1. Black Men Who Have Sex with Men (MSM)
2. Black Heterosexual Males
3. Black Heterosexual Females
4. Black Injection Drug-Using Males (IDU)
5. White Men Who Have Sex with Men (MSM)
6. Black Injection Drug-Using Females (IDU)
7. Hispanic Men Who Have Sex with Men (MSM)

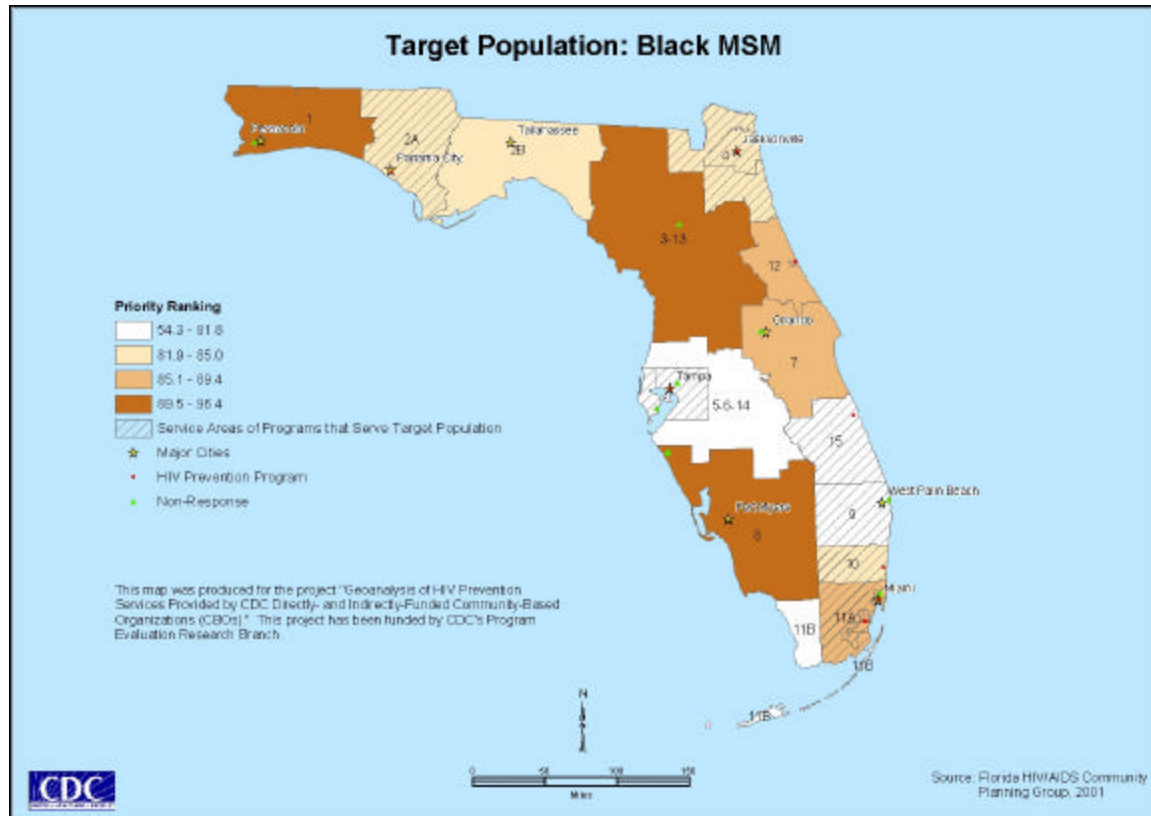
RTI has produced a series of maps (Figure 5-2 through 5-8), one for each of the seven target groups, that show the geographic distribution of rankings by partnership.¹ Against this backdrop of “need” are the geographic service areas of CDC-funded CBO-administered HIV prevention programs that provide services to that target population. Geographic service areas were identified through queries on Questions 2 (risk population) and 3 (race/ethnicity) of the HIV Prevention Services Database. In some cases, gender could not be separated out. It is important to keep in mind, when examining Figures 5-2 through 5-8, that CBO service area data were collected for fiscal year 2000, while the Florida HIV/AIDS prevention plan is for 2001–2003.

Figure 5-2 shows the distribution of rankings for Black MSMs.² Priority rankings for this target group are highest in four partnerships: the Pensacola region, the Fort Myers region, and Partnerships 3 and 13, where Gainesville is located. None of the CBOs that responded to the survey indicate that they provide HIV prevention services to Black MSMs in these regions. However, at least one nonresponding CBO is present in each region.

¹ In the *State of Florida 2001–2003 HIV/AIDS Prevention Plan*, geographic descriptions were provided for Partnerships 3 and 13 combined and for Partnerships 5, 6, and 14 combined. Priority rankings for these units were averaged by RTI so they could be mapped.

² All maps in Figures 5-2 to 5-8 used quantile distributions to determine map classes.

Figure 5-2. Black MSM Target Population



The Florida HIV/AIDS Community Planning Group seems to have a good understanding of where additional services are needed for this target population, hence the high rankings in these areas. Indeed, the *Priority Setting Worksheet* not only evaluated barriers for prevention providers to reaching the population and for the target population to access prevention services, it also placed an emphasis on Community Input Process Points (CIPPs), a measure that was based on community expertise on unmet needs and barriers.

The distribution of priority rankings for the second target population, Black Heterosexual Males, is shown in Figure 5-3. Again, the Fort Meyers and Pensacola regions show up with high priority rankings. The Panama City region (Partnership 2A) is high, also. Among the areas with high rankings, the only geographic service area coverage reported by responding CBOs for this target population is in Jackson County, in the northeastern portion of Partnership 2A. Other areas that were ranked relatively high do have geographic service area coverage. Much of Partnership 2B (Tallahassee region) is covered, as is the Miami region and the area northwest of Orlando.

Figure 5-3. Black Heterosexual Male Target Population

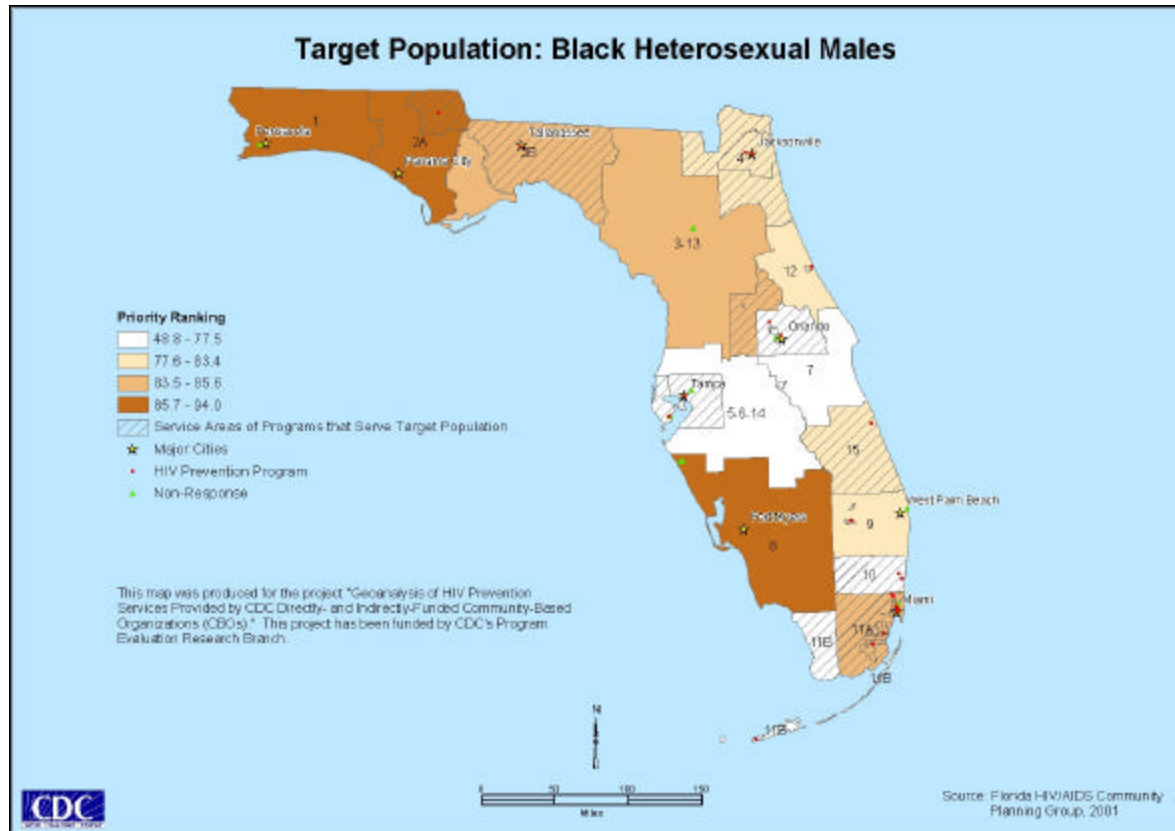
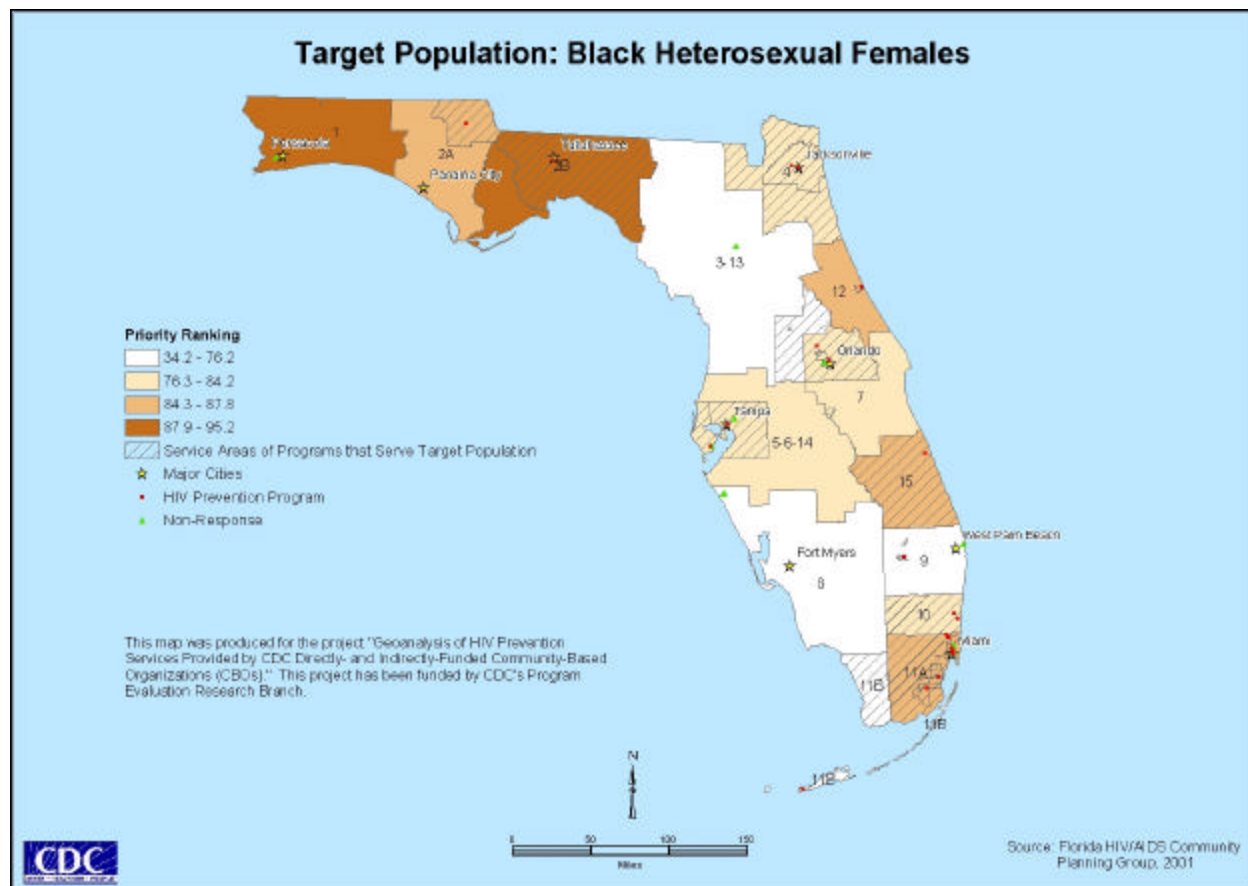


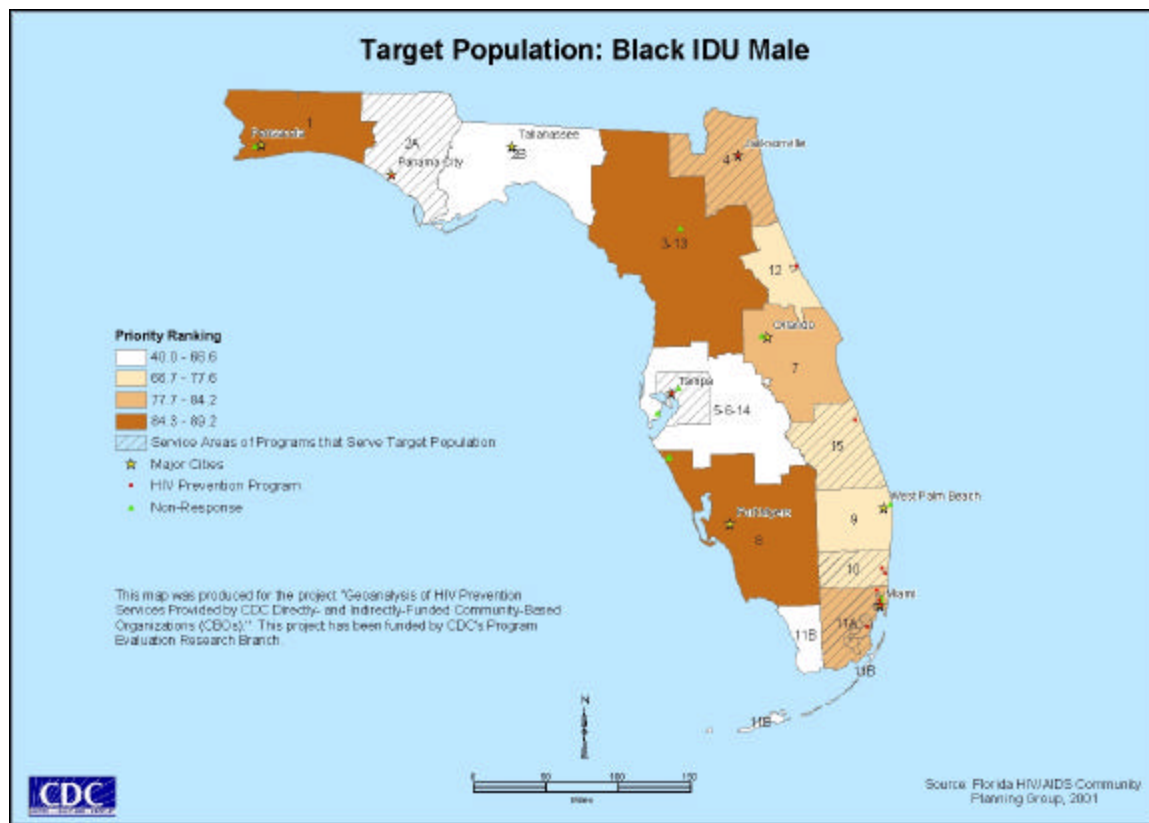
Figure 5-4 shows priority rankings for the Black Heterosexual Female target population. The areas with the highest priority rankings are located primarily in the Florida Panhandle. Much of this area is covered by CBO-administered HIV prevention services. These CBOs are located in Tallahassee and Marianna, in Jackson County. The Miami and Vero Beach areas also have coverage.

Figure 5-4. Black Heterosexual Female Target Population



Priority rankings for the Black IDU Male target population are shown in Figure 5-5. As with Black MSMs, these rankings are highest in Partnerships 1, 3, 8 and 13. There is little overlap between “need” and service provision, except for in the Miami and Jacksonville areas. Again, the locations of nonresponding CBOs need to be noted.

Figure 5-5. Black IDU Male Target Population



Priority rankings for White MSMs are highest in the Florida Panhandle—Pensacola and Panama City regions—and in the coastal area north of West Palm Beach (see Figure 5-6). Much of this area contains corresponding prevention services, the Pensacola region being an exception (again, note the lack of response from the Pensacola CBO). Partnerships 2B (Tallahassee region) and 12 (Daytona Beach region) seem to need greater services. However, these maps show only those services reported by CDC-funded CBOs that responded to the survey. A true gap analysis would need to incorporate services provided by a wide range of other agencies and organizations

Figure 5-6. White MSM Target Population

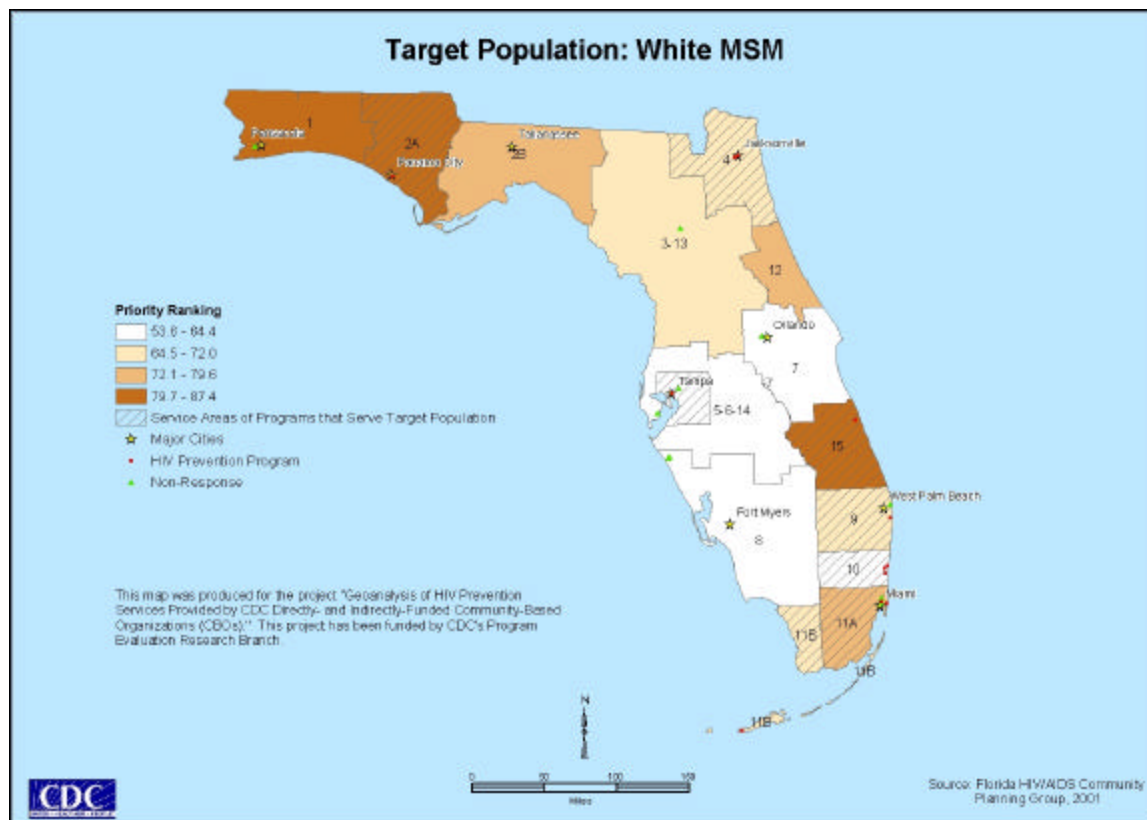
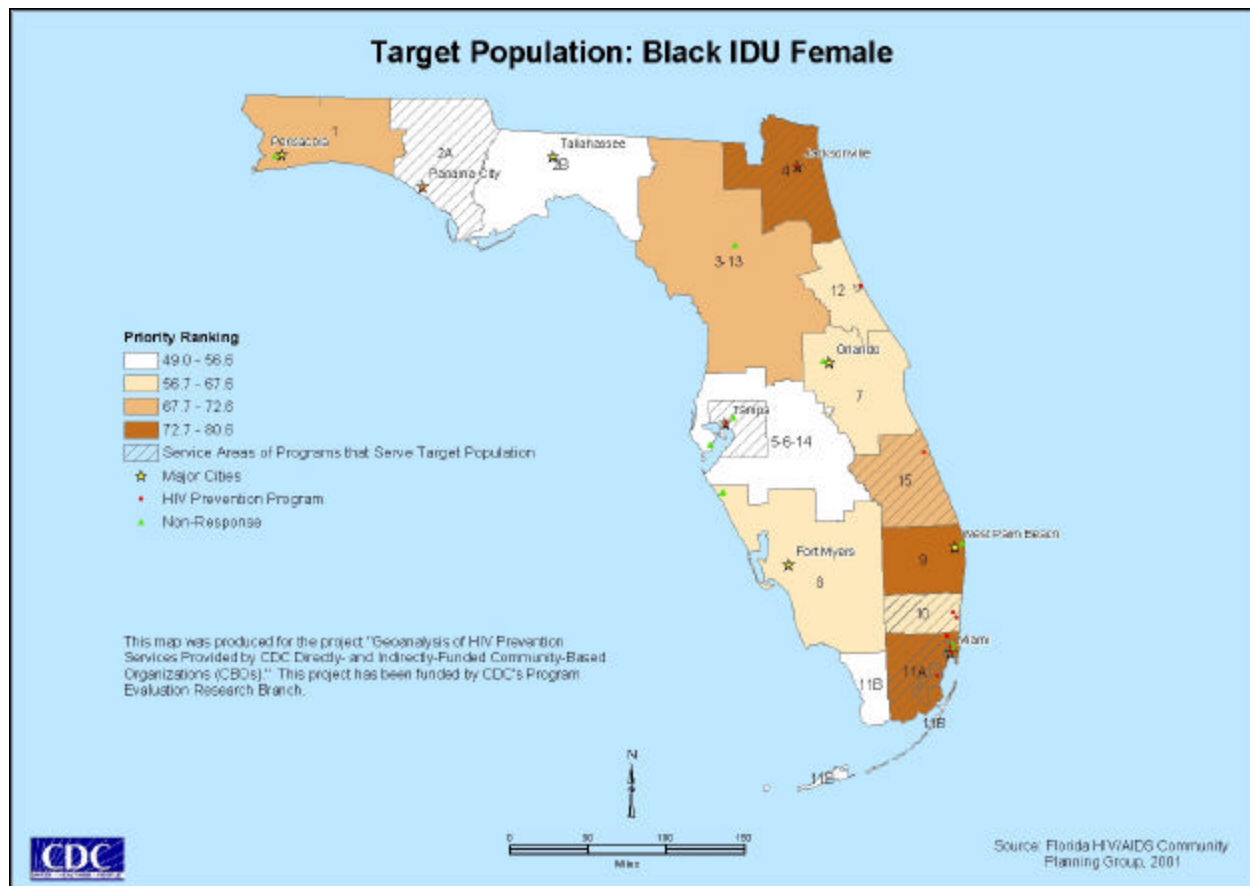
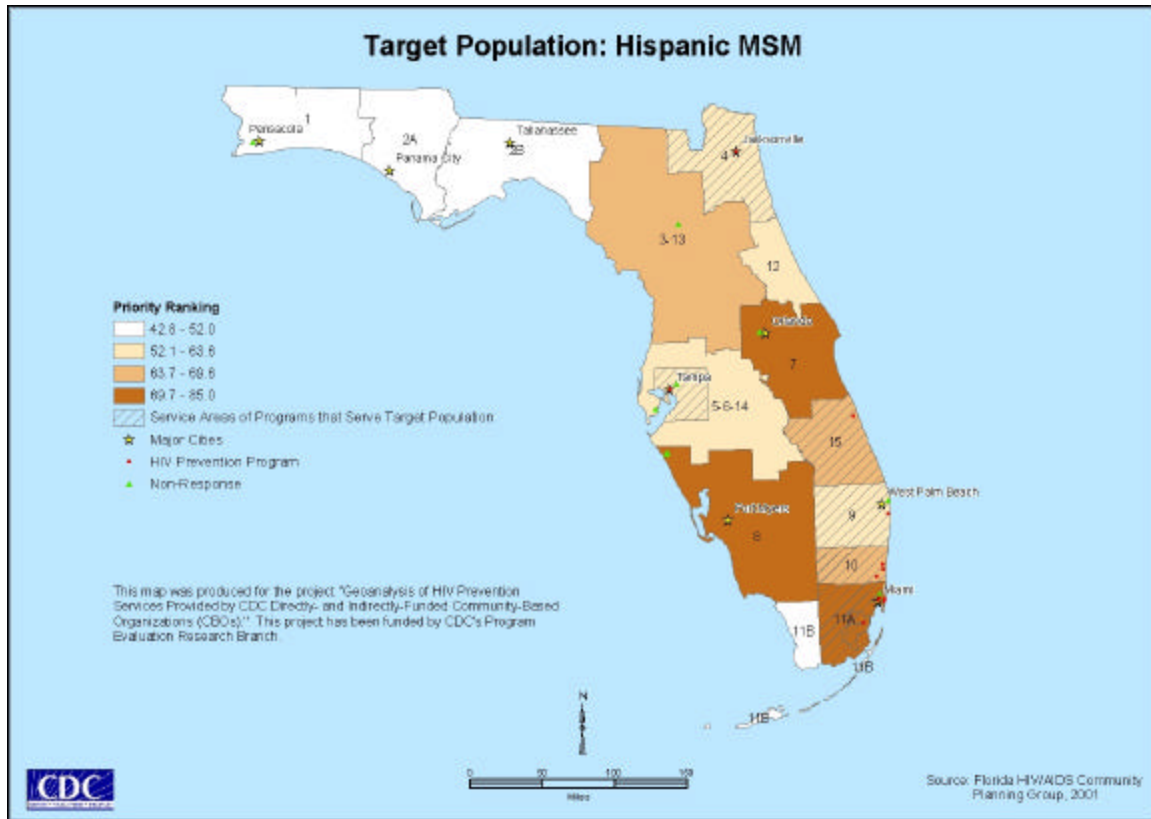


Figure 5-7 shows the distribution of priority rankings for Black IDU Females. This distribution is very different from that in Figure 5-4 (Black Heterosexual Females). The highest rankings are in the Miami, West Palm Beach, and Jacksonville areas. CBO-provided services are found in Jacksonville and Miami, but not in the West Palm Beach region. Again, the presence of a nonresponding CBO in this area needs to be noted. Nonresponding CBOs are also present in the Gainesville and Pensacola areas, which also have relatively high priority rankings.

Figure 5-7. Black IDU Female Target Population



Priority rankings for Hispanic MSMs, shown in Figure 5-8, are highest in the Miami, Fort Myers, and Orlando regions. Survey responses indicate that the Miami region has HIV prevention services for Hispanic MSMs, but services appear to be lacking in the other two regions. Again, these regions contain nonresponding CBOs.

Figure 5-8. Hispanic MSM Target Population

The survey response rate for Florida was just over 74 percent. Twenty-nine of the 39 CBOs responded. Unfortunately, many of the nonresponding CBOs are located in areas that had high priority rankings for one or many of the seven target populations described. It is difficult to determine, therefore, whether these areas are lacking in CDC-funded CBO HIV prevention services, or if lack of survey response is a major factor. Because many of the areas that have been identified as “high-need” areas are lacking in services, it would appear that Florida has effectively evaluated unmet needs.

The Florida HIV prevention plan provides rich data resources that are not available for most other states; these include the priority rankings and their correspondence with mappable regions of the state. If these data were available for all states, similar types of analyses could be conducted to identify geographic gaps in service provision. While cartographic modeling could be used to overlay and synthesize a series of maps showing risk factors for HIV/AIDS infection, the data necessary for this type of analysis are lacking. One would need county-level or regional HIV/AIDS data, demographic data from the U.S. Census, risk behavior data (for the risk factors associated with HIV/AIDS),³ information about barriers to access to care, and community intervention activities. It is helpful, however, to examine maps at a more localized scale than the entire United States and look at patterns of HIV/AIDS infection and locations of CBOs and services. RTI has done this for California and Ohio. Originally, Arkansas would have been included in this section; however, online data for Arkansas appeared to contain some inconsistencies that would have had an impact on map distributions.

³ While some relevant risk factor data are available from the Behavioral Risk Factor Surveillance System (BRFSS), the geographic precision needed for this type of analysis is lacking.

5.3 State Maps: California and Ohio

5.3.1 California

At the end of 2001, California ranked second in the nation in the number of cumulative AIDS cases. California accounted for a disproportionate share, with about 15.9 percent of the nation's cases but only 12 percent of the nation's population. California, like Florida and New York, has disproportionate shares of both adult and pediatric AIDS cases.

About 61.1 percent of California's total cumulative AIDS cases are now known to be dead. This mortality rate is a bit higher than Florida's (56%). In both states, the number of new cases peaked in the early 1990s and then steadily declined. In California, between 1999 and 2000, the number of new AIDS cases dropped 11.4 percent, following a 9 percent decline from 1998 to 1999 (CDHS, 2001b; CDHS, 2002).

The number of new cases reported annually has declined steadily since 1993, but the survival time after AIDS diagnosis has risen dramatically; the mean survival time in 1993 was double that in 1988. The improvement in treatment efficacy can have hidden dangers, as infected people who live longer have more opportunity to spread the disease. The Office of AIDS estimates that, at the end of 2001, more than 65,000 Californians were HIV-infected (in addition to 44,496 living with AIDS).

For newly reported AIDS cases in 2000, California has less than a proportionate share—only 11.6 percent of the new cases (and 12% of the nation's population). (By contrast, Florida has a disproportionate share—13.2% of the new cases and less than 6% of the nation's population). For populations living with AIDS, both California and Florida had more than a proportionate share of the nation's total at the end of 2001: California had 13.8 percent of living AIDS cases, but only 12 percent of the nation's total population, while Florida had 11.6 percent of living AIDS cases and less than 6 percent of the nation's population (CDC, 2001c).

Although California ranks second in the total number of AIDS cases, the incidence of HIV infection is unknown, because HIV infection without AIDS is not reported in California. The Budget Act of Fiscal Year 2000–2001 provided funds to the California Office of AIDS for developing and implementing an HIV reporting system. Implementation is targeted for July 2002. Reporting of HIV and AIDS incidence together will allow better monitoring and more effective targeted intervention for prevention, education, and resource allocation toward affected populations.

California has published a geographic study of AIDS surveillance data, in which age-adjusted standardized AIDS incidence rates are mapped at the county level for six demographic subgroups (CDHS, 2001a). The purpose of the study was to help public health officials identify areas of greatest need for HIV/AIDS prevention. Although these maps are very useful in looking at the county-level distribution of AIDS rates for demographic subgroups, they do not include information about prevention services.

Figure 5-9 shows the cumulative AIDS incidence rates for California from 1981 to 2001. CBO locations are indicated with blue dots. The counties with rates in the highest 20 percent include San Diego, Los Angeles, San Francisco, Alameda, Solano, Marin, and Sonoma.

RTI attempted to produce an informative map showing geographic services areas of CBO-provided HIV prevention services in California, but, because some CBOs indicated statewide coverage for all intervention types, all risk populations, and all race/ethnicities, this map was not useful. However, querying the HIV Prevention Services Database using more specific parameters would provide more useful information. Examining CBO locations provides some insight into geographic coverage, however.

Although many California counties have high cumulative AIDS incidence rates, CBOs are concentrated in only a few counties. Alameda, Los Angeles, San Francisco, and San Diego counties have 16, 38, 27, and 8 CBOs, respectively. Marin, Sonoma, and Solano counties have none. Figure 5-9 would indicate a need for CBO-provided HIV prevention services in many additional California counties; however, this map does not show HIV prevention services funded by sources other than CDC.

5.3.2 Ohio

In Ohio, HIV infection has been reported since 1990 (and AIDS cases have been reported since the mid-1980s). Rather than reporting the cumulative total of AIDS cases over time, Ohio provides quarterly reports on the current numbers of persons living with AIDS, with HIV, and with HIV/AIDS combined (ODH, 2001; ODH, 2002). The number of people living with HIV/AIDS in Ohio has been increasing in recent years.

Although only 48 percent of Ohio's population lives in the eight largest urban counties, about 68 percent of persons recently diagnosed (1998–2001) with HIV/AIDS reside in those eight counties. There is a substantial amount of migration around the state (mostly from urban to less urban areas) among people living with HIV/AIDS after they become infected; about 11 percent of persons with AIDS who died in 1995/1996 had migrated. Over one-half of the AIDS cases from the three largest counties migrated away before death. Younger White males who were MSM or MSM drug users and who lived

Figure 5-9. Cumulative AIDS Incidence Rates for California, 1981–2001



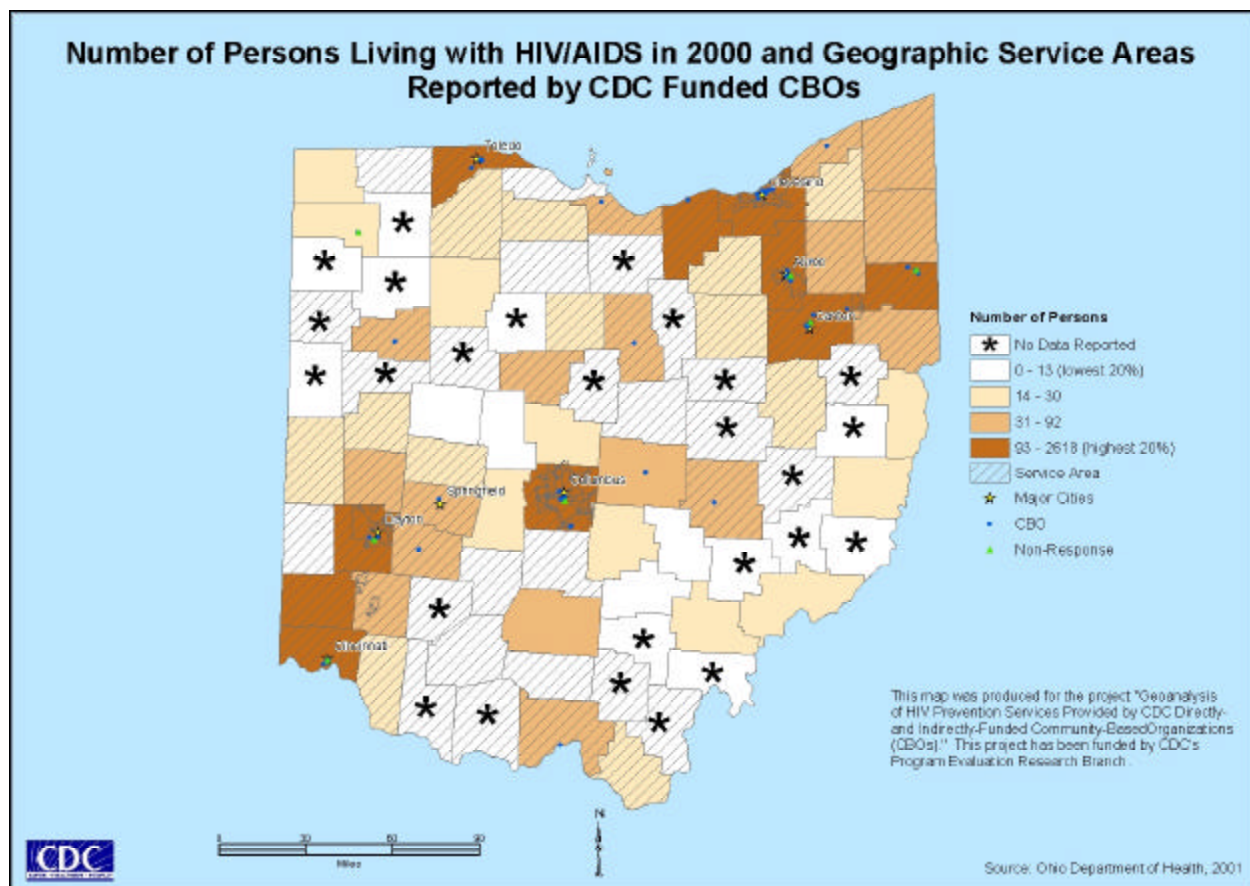
5.0 Local Analyses: Case Studies

longer between diagnosis and death were more likely to migrate. Monitoring these migration patterns is part of the state's efforts to track the disease and plan effective prevention programs.

As of December 2001, an estimated 10,200–18,000 persons were living with HIV/AIDS in Ohio (ODH, 2001). These estimates include persons infected with HIV who may not be aware of it and people with AIDS. At the end of 2001, 11,383 persons were reported currently living with HIV/AIDS, and 7,481 previously reported cases had died from AIDS.

Figure 5-10 shows the county-level distribution of persons living with HIV/AIDS in Ohio counties for the year 2000. Geographic service areas of all responding CBOs that provide services in Ohio are shown in the hatched pattern. Ohio had one of the highest CBO response rates of all states: 42 out of 50 (84%) CBOs responded to the survey. Although many of Ohio's CBOs are concentrated in the major urban areas of Cleveland, Akron, Columbus, Dayton, and Cincinnati, CBOs are also found in smaller localities in various counties throughout the state. CBO-provided HIV prevention services appear to be provided in all counties with relatively high numbers of HIV/AIDS-infected persons. Services also exist in many nonurban counties.

Figure 5-10. Number of Persons Living with HIV/AIDS in Ohio Counties



Summary and Conclusions

6.1 Capabilities and Potential of HIV Prevention Services Database

The primary purpose of this project was to create a geographically referenced database of CDC-funded, CBO-provided HIV prevention services. RTI has provided CDC with a complete Access database with all of the information obtained from the survey instrument. This includes the location and contact information of all 1,450 CBOs deemed eligible to participate in the survey, and survey response information for the 1,020 CBOs that responded and their associated programs (n = 3,028).

In addition, RTI has provided CDC with a comprehensive GIS database that contains all of the georeferenced survey data. This database contains many map layers, including CBO locations; state, county, city, ZIP code, and reservation boundaries; geographic services areas, using both the geopolitical boundary and geographic distance methods of service area delineation; and state and county census boundary files that contain Census 2000 demographic information. All of these data can be accessed through a single ArcView application (.mxd file), which has also been provided to CDC. This file also contains two customized VBA tools that allow users to easily query and display data.

RTI has provided CDC with examples of how these data can be used to answer questions and analyze HIV prevention services. RTI has also demonstrated methods of analysis, including mapping, GIS overlay of multiple map layers, calculation of location quotients (LQs), and the incorporation of GIS technology into gap analysis. In both the national-level and state-level analyses, RTI has only touched the surface of the analysis potential of this rich database. For instance, Section 4 includes descriptions of a number of univariate queries on intervention type, risk population and race/ethnicity served. The possible combinations of variables in these three categories number in the thousands. With this HIV Prevention Services Database, CDC staff can design queries to ask questions about services in specific geographic areas. The focus of queries could be a single CBO, many CBOs, a single ZIP code, or the entire United States.

RTI has also demonstrated how various state and national data sets can enhance data analysis. State-level HIV/AIDS data can provide a better understanding of the general geographic patterns of the epidemic and serve as a backdrop to the examination of prevention services. More specific, geographically focused information from state HIV prevention plans can provide valuable insight about target populations and geographic areas of need. RTI hopes that CDC will use these data to their full potential and will continue to maintain this rich database of CBOs and their services.

6.2 Evaluation of Survey Instrument and Data Collection Methodologies

Completing the HIV Prevention Service Area Survey was challenging for many respondents, as described in Section 2.2. Many respondents invested considerable effort in resolving questions and ensuring that the information provided on the questionnaire met the study's requirements.

The questionnaire's content and organization are different from those of other surveys and data collection protocols used by HIV prevention programs. Many of the respondents who used telephone support reported finding the questionnaire intimidating at first glance, particularly because of the inclusion of multiple response sheets, many more than were needed by most respondents. These concerns were readily resolved for those who called the toll-free numbers provided.

The apparent complexity of the questionnaire is likely to have discouraged some respondents from completing it. Although the 70 percent response rate achieved is strong for a survey with no participant incentives, considerable follow-up efforts were required to achieve this level of response. Response rate is particularly important for this type of data, because subsets of responses are not generalizable to the larger population. Any measures that can reduce barriers to, or create incentives for, participation, would thus have a significant impact on data quality.

Data editing revealed some problems with inconsistent or illogical responses. Most questions were resolved through telephone follow-up to respondents. Common problems and examples of each include

- | *Conflicting responses.* The service area was described as covering several counties, but the distance within which people receiving the service live was described as less than 5 miles.
- | *Unlikely answers.* A prevention program was described as providing street and community outreach for the entire state.
- | *Missing responses.* Items on intervention type, characteristics of persons served, or service area were left blank.
- | *Variable interpretation.* Examination of the maps in Section 4 suggests that interpretation of items varied among respondents.

Many of the concerns encountered in this survey (the first to attempt collection of spatial and programmatic data) could be addressed by further refinement of the instrument. One strategy would be to provide sample responses for a hypothetical prevention program (e.g., "Project X provides group-level interventions to MSMs in both the city and suburbs, as well as street outreach to MSMs who use intravenous drugs in one downtown neighborhood."), showing the corresponding survey response. Another option, described in Section 6.5, would be use of a Web interface for data collection. This approach could substantially improve both survey response and data quality by allowing immediate resolution of problematic responses and the opportunity to view graphics based on responses and make revisions as needed.

6.3 Comparison of Methods: Geopolitical Units vs. Geographic Distance

The survey instrument was partially designed to evaluate two commonly used methods of delineating service areas: geopolitical units and geographic distance. These two methods were described briefly in Section 2. As is clear in Sections 4 and 5, and for reasons described below, RTI decided to use service areas that correspond with geopolitical units for this analysis.

Question 5 of the survey asked about geopolitical units that corresponded with HIV prevention program service areas. Question 6 asked respondents to provide a distance estimate of the area within which most of their services were provided. During an early assessment of survey responses, it became clear that respondents were not always answering Question 6, and RTI needed to decide what constituted a “complete” survey. This decision involved an assessment of the callbacks that would be required to get responses to specific questions and the resources that were available to make these calls. It was decided that a response to Question 5 would be required; a response to Question 6 would not. This decision was based partly on some early piloting of survey data that indicated that the geographic distance method would not yield results that were easily interpretable.

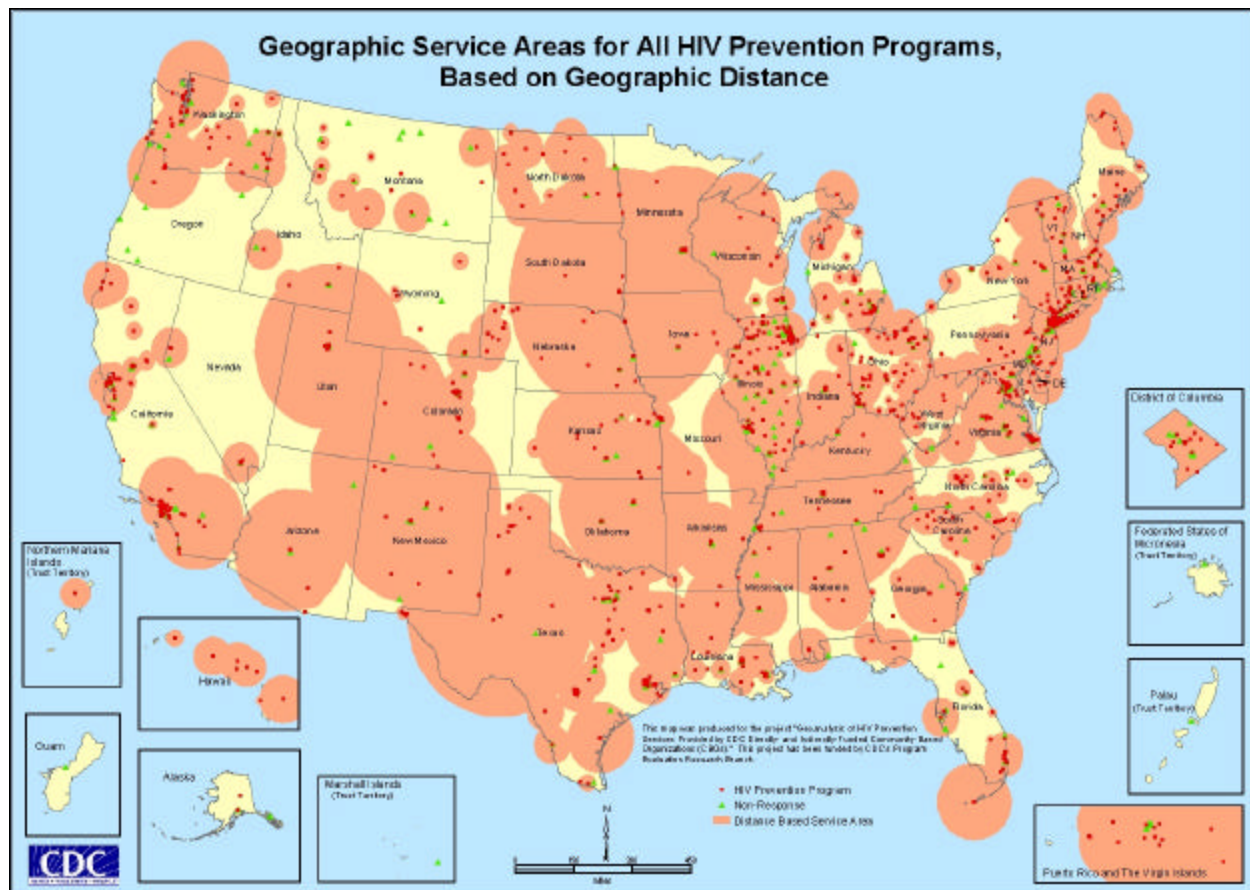
Figure 6-1 shows the geographic service areas of all CBOs that responded to the survey, using the geographic distance method. These service areas are represented as circles with radii that correspond to the reported distance. The map suggests that these geographic units can be difficult to interpret. For example, in both Hawaii and Puerto Rico, the circles actually extend out into the ocean, beyond the island boundaries. In many other instances, they run into the water. (This could be corrected by intersecting GIS boundary files with the circular units and clipping them, but this processing would slow down query response time considerably) In many areas, the circular units converge, making it difficult to determine which underlying geographic units are actually covered.

In some cases, however, these geographic distance units might provide a more accurate picture of services. In California, for example, the circular units are more indicative of the areas surrounding CBO and program locations than the geopolitical units were. (Statewide coverage for all intervention types was reported for California, as indicated on the Section 4 maps.) In fact, statewide coverage seen for many states in the Section 4 maps is not as dominant in Figure 6-1. However, because not all CBOs responded to Question 6, some geographic coverage is missing.

This geographic-distance-unit map layer is included in the ArcView application that has been provided to CDC and is available for further analysis. RTI feels that, although the bulk of the analysis used data from Question 5, Question 6 also provided data of substantial value. Question 6 data served as a check for Question 5 responses, especially in cases where respondents reported that they served an entire state. In many instances, RTI staff examined the value of the Question 6 response when questions about geopolitical service areas arose. Thus, the distance value in Question 6 served as a quality assessment indicator for geopolitical unit data.

If data are collected via similar instruments in the future, RTI would recommend leaving this type of service unit question in the survey. However, RTI strongly recommends that future service area data collection efforts be Web-based. This is discussed in Section 6.5.

Figure 6-1. Geographic Service Areas for All HIV Prevention Programs, Based on Geographic Distance



6.4 Potential Implications for HIV/AIDS Planning

As noted earlier, the true power of this tool lies in its use as an interactive query tool. The maps and discussion in Sections 4 and 5 only hint at the potential power of georeferenced data as a tool for analyzing and planning HIV/AIDS prevention services. A few examples of the ways in which such a database could be used include

- | *Examining regional variations in service offerings.* Figure 4-17 shows that prevention case management is offered fairly consistently in the high-incidence metropolitan areas along both coasts and in some large inland metropolitan areas. However, these services are also indicated as being widely available in some Midwestern and southwestern areas. This may reflect differences in service planning approaches that could be examined to explore how states choose to distribute their resources.
- | *Assessing service coverage.* Some services, such as Counseling, Testing, Referral, and Partner Notification and Health Communications/Public Information, should by their nature be broadly available rather than limited to high-incidence areas. Maps such as Figures 4-19 and 4-20 demonstrate that this is not the case, suggesting possible gaps even in the absence of other indicators of need.

- | *Examining service distribution in relation to need.* Relatively few jurisdictions have timely access to detailed data with which to assess need (i.e., HIV incidence data by demographic and exposure characteristics); however, the discussion in Section 5 demonstrates how carefully constructed indicators based on expert opinion (far more readily available) can serve as a rich counterpoint to georeferenced service area data. Indeed, expert opinion data may be more timely and more sensitive to environmental changes than the “gold standard” incidence data.
- | *Supporting community planning processes.* Although maps such as those in Sections 4 and 5 can quickly communicate complex data, even to the general reader, their potential utility is far greater when used in the context of other data sources and working knowledge of the communities depicted. The query tool and mapping process supported by this database could be immensely useful to a community planning group assessing its current allocations or comparing alternative strategies for resource distribution. At this level, inclusion of HIV/AIDS prevention services supported by funding sources beyond CDC would be a particularly valuable addition to the database.

6.5 Recommendations for Future Data Collection Activities and Research

The program data collected for this project were for prevention services provided during fiscal year 2000. RTI strongly recommends that the HIV Prevention Services Database be updated and maintained on an annual basis. Furthermore, RTI recommends that future data collection efforts use Web-based survey methodologies. These methodologies are being used increasingly in health, social sciences, and educational research.

A Web-based survey would allow survey respondents to enter data and check results. Scripts can be written to capture responses and import information from these responses to standard PC databases or statistical packages. With the proper programming, the geographic service area data entered by the respondent could be captured and displayed on a map. Respondents could then view the service areas they have delineated and confirm their accuracy. A number of software tools exist for Web survey administration. These have the capability of tracking survey responses, much like the control system that was developed by RTI for this project, and sending out e-mail cover and reminder letters.

Research on Web-based survey methodologies is still somewhat limited, but some studies have shown that response rates for Web-based surveys are lower than those for mail surveys (Solomon, 2001). There are indications, however, that response rates improve dramatically with e-mail or phone follow-up. The primary concern with Web-based surveys appears to be that of access. Some potential respondents may not have access to the Internet, which would result in sampling or coverage bias. More research needs to be done to identify the best ways to structure and format Web-based surveys, to increase response rates and obtain the most reliable information.

In addition to the Web-based survey recommendation, RTI recommends that CDC conduct more extensive analyses of the HIV Prevention Services Database to develop a better understanding of the geographic coverage of HIV prevention services in the United States. One type of analysis that was not carried out by RTI is that of identifying areas where services may be duplicated. This would be done by identifying geographic overlaps in services with the same combinations of intervention type, risk population, and major race/ethnicity.

Furthermore, RTI recognizes the benefit of working with the various state community planning groups specifically to carry out geographic analyses. These groups have access to community indicators and HIV/AIDS data that might not be accessible to CDC. Florida's priority ranking methodology is well suited for geographic analysis and demonstrates the potential of a geographic health services gap analysis.

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Appendix A

Survey Instrument

HIV Prevention Service Area Survey

Instructions

- Please answer all questions on the forms provided.
- A reference map is provided to help you answer the questions. If there is other information that would help you answer the questions, such as reports or maps, feel free to use it. If the reference map does not show your service location(s), call Carol Hanchette at (800) 334-8571 extension 2758 for additional maps.
- This survey asks about risk populations served, interventions and geographic service areas. Definitions for these are provided in the accompanying booklet.
- The time frame reference for all questions is your organization's **fiscal year 2000**.
- Questions refer only to prevention programs supported by CDC, either directly or through a cooperative agreement with your health department.
- If you have questions, please contact Dr. Aisha Gilliam with the Centers for Disease Control and Prevention at (404) 639-0919 or Deborah Gibbs at Research Triangle Institute, (800) 354-8571, extension 6942.

Public reporting burden of this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Reports Clearance Officer, 1600 Clifton Road NE, MS D-24, Atlanta, Georgia 30333; ATTN: PRA (09200-0507).

CBO Name: _____

Your Name: _____ **Telephone:** _____

Your organization's Employer Identification Number (EIN): _____

(The EIN is the I.R.S. U.S. Tax Code number for non-profit organizations).

Your HIV Prevention Programs

- For purposes of this survey, an **HIV prevention program** represents a set of interventions provided to a specific population in a geographic service area.
- A **service location** is the place where services are offered or staff located. It may be different from your organization's administrative offices.
- For each of your organization's service locations, please list all of the HIV prevention programs provided from that location. If your organization provides services from more than one location, please list the interventions from each location separately, even if they are funded through the same contract.
- For each prevention program listed, please use a yellow sheet to describe the population served, services provided and geographic services area. Sometimes a single program serves different populations or provides different services in different geographic areas, i.e., street outreach to Hispanic IDUs in one area and individual level interventions to Black IDUs in another. If this is the case, fill out one yellow sheet for each geographic area. If you need additional forms, call Melissa Helton at (800) 354-8571, extension 7168.

	Name of HIV Prevention Program	Service Location
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Are all these HIV prevention programs provided from the same service location?

☐ ¹ Yes → please provide street address
including ZIP code:

Street address (not Post Office Box)

City

State

ZIP

☐ ² No → Please enter service location address on each yellow sheet.

HIV Prevention Program: _____

Service Location Address (if different from address on blue sheet)

Street address (not Post Office Box)

City

State

ZIP

1. Please mark the intervention type provided by this prevention program (refer to page 1 of the Definition Booklet). You may check more than one intervention type .

- ☐ ¹ Individual Level Interventions
- ☐ ² Group Level Interventions
- ☐ ³ Street and Community Outreach
- ☐ ⁴ Prevention Case Management
- ☐ ⁵ Community Level Interventions
- ☐ ⁶ Health Communications/ Public Information
- ☐ ⁷ Counseling, Testing, Referral And Partner Notification

2. Please mark the risk populations this prevention program serves (refer to page 2 of the Definition Booklet). You may check more than one population.

- ☐ ¹ MSM
- ☐ ² MSM/IDU (and other drug users)
- ☐ ³ IDU
- ☐ ⁴ Heterosexual
- ☐ ⁵ Mother with/at risk for HIV
- ☐ ⁶ General Public

3. Please mark the box or boxes that best describe the race/ethnicity of the majority of persons served by this prevention program. You may check more than one box.

- ☐ ¹ African American
- ☐ ² American Indian or Alaska Native
- ☐ ³ Asian
- ☐ ⁴ Native Hawaiian or Other Pacific
- ☐ ⁵ Hispanic or Latino
- ☐ ⁶ White
- ☐ ⁷ More than one race
- ☐ ⁸ Race unknown

4. This prevention program is supported by CDC funds:

- ☐ ¹ Granted *directly* from CDC
- ☐ ² Provided *indirectly* through a state or local Health Department
- ☐ ³ *Both* directly from CDC and indirectly through a state or local Health Department

5. Please describe the area where the majority (roughly 80%) of people receiving this prevention program live. (For Street and Community Outreach, describe where majority of activities take place.)

- ▶ Check *the first box* that applies, then fill in the requested information below that box.
- ▶ Check *additional boxes* and fill in the requested information *if* your service area is best described by multiple geographical units (e.g. several zip codes and a city in another portion of the county).
- ▶ The enclosed reference map* shows counties, cities and zip codes in your area. For examples of how to describe geographic service areas, refer to page 3 of the Definition Booklet.

- ☐¹ An **entire state or territory**, or multiple states or territories:
Please list the states served.
1. _____ 2. _____
- ☐² An **entire county or islands**, or multiple counties or islands, but an area smaller than an entire state: or territory:
Please list the counties served.
1. _____ 4. _____
2. _____ 5. _____
3. _____ 6. _____
- ☐³ An **entire city/town** or multiple cities/towns, but an area smaller than an entire county:
Please list the cities and towns served.
1. _____ 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____
- ☐⁴ An **area smaller than an entire city/town**:
Please list the zip codes served.
1. _____ 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____
- ☐⁵ **Tribal lands**:
Please list the tribal lands served (e.g. Morongo Indian Reservation).
1. _____ 4. _____
2. _____ 5. _____
3. _____ 6. _____

6. Using the reference map*, please check the distance within which the majority (roughly 80%) of people receiving this prevention program live from this service location. (For Street and Community Outreach, describe where majority of activities take place.)

- | | | |
|---|---|--|
| <input type="checkbox"/> ¹ < 5 miles (specify _____) | <input type="checkbox"/> ³ 10-15 miles | <input type="checkbox"/> ⁵ 20-25 miles |
| <input type="checkbox"/> ² 5-10 miles | <input type="checkbox"/> ⁴ 15-20 miles | <input type="checkbox"/> ⁶ > 25 miles (specify _____) |

* If the enclosed map does not show your service location, call Carol Hanchette at (800) 334-8571, extension 2758 and we will send you one that does.

Appendix B
Reference Map Included with Survey

Appendix C

Response Status of Each CBO

CBO ID	City	State	Status
15015	Boston	MA	Responded
15021	Oakland	CA	Duplicate
15028	San Francisco	CA	Responded
15043	Atlanta	GA	Duplicate
15144	San Francisco	CA	Responded
15149	Los Angeles	CA	No Response
15155	Brooklyn	NY	Duplicate
15173	San Antonio	TX	Responded
15185	Los Angeles	CA	Responded
15190	Birmingham	AL	Responded
15194	Baltimore	MD	No Response
15197	Largo	MD	Responded
15199	St. Louis	MO	Duplicate
15225	New Orleans	LA	No Response
15226	Fort Lauderdale	FL	Responded
15227	Brooklyn	NY	Responded
15240	Oakland	CA	Duplicate
15246	Miami	FL	Responded
15278	Miami	FL	Responded
15337	Los Angeles	CA	Responded
15339	San Juan	PR	No Response
15356	Cleveland	OH	Responded
15393	Hagatna	GU	No Response
15430	Detroit	MI	Responded
15432	Detroit	MI	Responded
15466	Baltimore	MD	No Response
15487	New Orleans	LA	No Response
15496	Houston	TX	Responded
15497	Washington	DC	Responded
15502	San Diego	CA	Duplicate
15513	Apopka	FL	Responded
15522	Claremont	CA	No Response
15559	Belle Glade	FL	Responded

CBO ID	City	State	Status
15576	New Orleans	LA	Responded
15578	Miami	FL	Responded
15581	Chicago	IL	Responded
15584	Philadelphia	PA	Duplicate
15600	New York	NY	No Response
15615	Baltimore	MD	No Response
15620	Atlanta	GA	Responded
15664	Saint Just Truyilloalt	PR	No Response
15685	Dallas	TX	Responded
15697	Indianapolis	IN	No Response
15714	New York	NY	No Response
15715	East Orange	NJ	Responded
15724	Birmingham	AL	Responded
15732	San Pedro	CA	Responded
15734	San Antonio	TX	Responded
15773	New York	NY	No Response
15774	Boston	MA	Responded
15796	San Diego	CA	Duplicate
15809	Detroit	MI	Responded
15854	Lansing	MI	Not Eligible
15863	Saline	MI	Responded
15874	Miami	FL	Responded
15878	Orlando	FL	No Response
15881	Jackson	MS	No Response
15884	Jefferson City	MO	Responded
15891	Helena	MT	Responded
15901	Orlando	FL	Responded
15916	Houston	TX	Responded
15922	Washington	DC	Duplicate
15923	Atlanta	GA	Responded
15925	Prince Frederick	MD	No Response
15926	Phoenix	AZ	Responded
15947	Jackson	MS	Responded
15968	Newark	NJ	No Response

CBO ID	City	State	Status
15979	Jacksonville	FL	Responded
16005	Decatur	GA	Responded
16006	Decatur	GA	Duplicate
16025	New York	NY	Responded
16033	Denver	CO	Responded
16044	Philadelphia	PA	Duplicate
16051	Pittsburg	CA	Duplicate
16063	Little Rock	AR	Responded
16091	Fort Lauderdale	FL	Responded
16134	New York	NY	Responded
16158	Chicago	IL	No Response
16162	Columbia	SC	Responded
16171	Lafayette	LA	No Response
16174	Baltimore	MD	Responded
16180	Atlanta	GA	Responded
16216	Greensboro	NC	Responded
16220	Baltimore	MD	Responded
16221	Baltimore	MD	Responded
16222	Milwaukee	WI	Duplicate
16250	East St. Louis	IL	Responded
16263	Newark	NJ	Responded
16267	Spokane	WA	Responded
16283	Miami Beach	FL	Responded
16304	Los Angeles	CA	Duplicate
16309	Tampa	FL	Responded
16328	New Brunswick	NJ	Responded
16331	Decatur	GA	Responded
16332	Phoenix	AZ	No Response
16345	Louisville	KY	Responded
16363	Philadelphia	PA	Responded
16392	Brooklyn	NY	Responded
16393	Los Angeles	CA	Responded
16401	Albany	NY	Responded
16405	Oklahoma City	OK	Responded

CBO ID	City	State	Status
16423	Brooklyn	NY	Responded
16454	Boston	MA	Responded
16469	Chicago	IL	Responded
16487	Sioux City	IA	Responded
16493	Nashville	TN	Responded
16494	Minneapolis	MN	Responded
16502	Miami	FL	Responded
16513	Flint	MI	Responded
16537	Chicago	IL	Responded
16538	Chicago	IL	Responded
16539	Chicago	IL	Responded
16540	Chicago	IL	Responded
25001	Richmond	VA	No Response
25002	Zanesville	OH	Responded
25003	Wichita	KS	No Response
25004	Rockville	MD	No Response
25005	Rockville	MD	Responded
25006	Baltimore	MD	No Response
25007	Washington	DC	No Response
25008	Baltimore	MD	Duplicate
25009	Washington	DC	No Response
25010	Hyattsville	MD	Responded
25011	Baltimore	MD	No Response
25012	Eau Claire	WI	No Response
25013	Minneapolis	MN	Responded
25014	White River Junction	VT	No Response
25016	Philadelphia	PA	Responded
25017	Quincy	IL	Responded
25018	Ritzville	WA	No Response
25019	Brooklyn	NY	No Response
25020	Minneapolis	MN	No Response
25022	Salt Lake City	UT	Responded
25023	Portland	OR	Responded
25024	Cheyenne	WY	Responded

CBO ID	City	State	Status
25026	Silver Spring	MD	No Response
25027	San Francisco	CA	Duplicate
25029	Atlanta	GA	Not Eligible
25030	Lawrenceville	GA	Responded
25031	Greenville	SC	Responded
25032	Las Vegas	NV	Responded
25033	Huntsville	AL	No Response
25034	Birmingham	AL	No Response
25035	Rockford	IL	No Response
25036	Providence	RI	Responded
25037	Rego Park	NY	Responded
25038	Lewiston	ME	Responded
25039	Syracuse	NY	Responded
25040	Albany	NY	Responded
25041	Roanoke	VA	Responded
25042	Wilmington	DE	Responded
25044	La Grande	OR	No Response
25045	Honolulu	HI	Not Eligible
25046	Houston	TX	Responded
25047	Dayton	OH	Responded
25048	Key West	FL	Responded
25050	South Bend	IN	Responded
25051	Madison	WI	No Response
25052	Martinsburg	WV	Responded
25053	Fort Worth	TX	No Response
25054	Detroit	MI	Responded
25055	Chicago	IL	Responded
25056	Davenport	IA	Responded
25057	Phoenix	AZ	Responded
25058	Oakland	CA	Responded
25059	Hartford	CT	Responded
25060	New Haven	CT	Responded
25061	Rock Island	IL	No Response
25062	Providence	RI	Responded

CBO ID	City	State	Status
25063	Worcester	MA	Responded
25064	Springfield	MO	Responded
25065	Newark	NJ	Not Eligible
25066	Sherman	TX	Responded
25067	Evansville	IN	Responded
25068	Pittsburg	KS	Responded
25069	Weatherford	TX	Responded
25070	San Jose	CA	Responded
25071	Winchester	VA	Responded
25072	Rochester	NY	Responded
25073	Raleigh	NC	Responded
25075	Irvine	CA	Responded
25076	Austin	TX	Not Eligible
25077	Denton	TX	Responded
25078	Richmond	IN	Responded
25079	Wheeling	WV	Responded
25080	Cleveland	OH	Responded
25081	Cincinnati	OH	No Response
25082	Cincinnati	OH	Responded
25083	Lexington	KY	Responded
25084	Grants Pass	OR	No Response
25085	Charlottesville	VA	Responded
25086	Charlottesville	VA	No Response
25087	Indianapolis	IN	No Response
25088	Lambert	MS	Responded
25089	Akron	OH	Responded
25090	Alamogordo	NM	Responded
25091	Brattleboro	VT	Responded
25092	Anchorage	AK	Responded
25094	Anchorage	AK	Responded
25095	Albany	NY	Responded
25096	Albany	GA	Responded
25097	Bronx	NY	Responded
25098	Albuquerque	NM	Responded

CBO ID	City	State	Status
25099	Albuquerque	NM	Responded
25100	Alexandria	VA	Responded
25101	Roxbury	MA	No Response
25102	El Paso	TX	Responded
25103	Albuquerque	NM	Responded
25104	Pittsburgh	PA	Responded
25105	Lima	OH	Responded
25106	Allentown	PA	Responded
25107	Alliance	OH	Responded
25108	Denver	CO	No Response
25110	Albany	NY	No Response
25111	San Jose	CA	No Response
25112	Amarillo	TX	Responded
25113	Oakland	CA	Duplicate
25114	Inglewood	CA	Responded
25115	New York	NY	No Response
25116	Salt Lake City	UT	Responded
25118	St. Louis	MO	Responded
25119	Seneca Falls	NY	Responded
25120	Buffalo	NY	Responded
25121	Toledo	OH	Responded
25122	Canton	OH	Responded
25123	Tuscaloosa	AL	Responded
25124	Statesboro	GA	No Response
25125	Houston	TX	Duplicate
25126	Anchorage	AK	Responded
25127	Anchorage	AK	Responded
25128	Lufkin	TX	No Response
25129	Newburyport	MA	Responded
25130	Rochester	NY	No Response
25131	Philadelphia	PA	No Response
25132	San Francisco	CA	Duplicate
25133	Dearborn	MI	Responded
25134	Albany	NY	Responded

CBO ID	City	State	Status
25135	St. Louis	MO	No Response
25136	Appleton	WI	Responded
25137	Schofield	WI	Responded
25138	Milwaukee	WI	Responded
25139	Little Rock	AR	Responded
25140	Arlington	VA	No Response
25141	Presque Isle	ME	Responded
25142	Philadelphia	PA	Responded
25145	Los Angeles	CA	Responded
25146	San Jose	CA	No Response
25148	Chicago	IL	Responded
25150	Los Angeles	CA	No Response
25151	Washington	DC	No Response
25152	Philadelphia	PA	No Response
25153	Clarkston	WA	No Response
25156	Brooklyn	NY	Responded
25158	Frederick	MD	Responded
25159	Atlantic City	NJ	Responded
25160	Carbondale	IL	Responded
25161	Matteson	IL	Responded
25162	Austin	TX	No Response
25163	Austin	TX	No Response
25164	Austin	TX	Responded
25165	Houston	TX	Responded
25166	Baltimore	MD	Responded
25167	Great Bend	KS	Responded
25168	Norfolk	VA	Responded
25169	Baton Rouge	LA	Responded
25170	Panama City	FL	Responded
25171	Houston	TX	Not Eligible
25172	Houston	TX	Responded
25174	Washington	NC	Responded
25175	Beloit	WI	Responded
25176	Richland	WA	Responded

CBO ID	City	State	Status
25177	Berkeley	CA	No Response
25178	Pittsfield	MA	Refusal
25179	New York	NY	No Response
25180	Belleville	IL	Responded
25181	Bethlehem	PA	Responded
25183	San Francisco	CA	Responded
25184	Chicago	IL	No Response
25186	Abilene	TX	Responded
25187	Hilo	HI	Responded
25188	Baltimore	MD	Responded
25189	Birmingham	AL	Responded
25191	Bismarck	ND	Responded
25192	Lansing	MI	No Response
25195	San Antonio	TX	Responded
25196	Milwaukee	WI	Not Eligible
25200	Walla Walla	WA	Responded
25201	Hendersonville	NC	No Response
25202	Fairbury	NE	Responded
25203	Port Huron	MI	No Response
25204	Cincinnati	OH	Responded
25205	Greenville	IL	Responded
25206	Belvidere	IL	Responded
25207	Boulder	CO	Responded
25208	Boulder	CO	Responded
25209	Fort Washakie	WY	Responded
25210	Wilmington	DE	Responded
25211	Brattleboro	VT	Responded
25212	Chicago	IL	Duplicate
25214	Sacramento	CA	Responded
25215	Bremerton	WA	Responded
25216	New Orleans	LA	No Response
25217	Bridgeport	CT	Responded
25218	Bronx	NY	Duplicate
25219	Bronx	NY	Responded

CBO ID	City	State	Status
25220	Bronx	NY	No Response
25221	Brooklyn	NY	No Response
25222	Brooklyn	NY	No Response
25223	Little Rock	AR	No Response
25224	Baltimore	MD	Duplicate
25228	Doylestown	PA	Responded
25229	Jackson	MS	Responded
25230	Houston	TX	Responded
25231	Princeton	IL	Responded
25232	Koror, Palau	PW	No Response
25233	Brooklyn	NY	No Response
25234	El Dorado	KS	No Response
25235	St. Paul	MN	Responded
25236	Oakland	CA	Duplicate
25237	San Francisco	CA	Responded
25238	Moreno Valley	CA	Responded
25239	Oakland	CA	No Response
25241	Long Beach	CA	Responded
25242	New York	NY	Responded
25243	Chicago	IL	No Response
25244	Cambridge	MA	Responded
25245	Somerville	MA	Responded
25247	Rehoboth Beach	DE	Responded
25248	Valdosta	GA	No Response
25249	Gillette	WY	Responded
25250	New York	NY	Responded
25251	Canton	OH	No Response
25252	Fayetteville	NC	Not Eligible
25253	Albany	NY	No Response
25254	Wichita	KS	Responded
25255	Miami	FL	Responded
25256	Houston	TX	No Response
25257	Detroit	MI	No Response
25258	Kalamazoo	MI	Responded

CBO ID	City	State	Status
25259	Brooklyn	NY	Responded
25260	Morgantown	WV	Responded
25261	Providence	RI	Responded
25262	Portland	OR	Responded
25263	Chadds Ford	PA	No Response
25264	Durham	NC	No Response
25265	Lancaster	CA	Responded
25266	Poughkeepsie	NY	Responded
25267	Oakland	CA	Responded
25268	Wilmington	DE	Responded
25269	Hartford	CT	Responded
25270	Burlington	VT	Responded
25271	St. Louis	MO	No Response
25272	Fort Lauderdale	FL	Responded
25273	Milwaukee	WI	Not Eligible
25275	New York	NY	Responded
25276	Syracuse	NY	Responded
25277	Dorchester	MA	Responded
25279	New Bedford	MA	No Response
25280	Pleasant Hill	CA	Responded
25281	Doraville	GA	No Response
25282	Boise	ID	Responded
25283	Alexandria	LA	Responded
25284	Loup City	NE	Responded
25285	Jamestown	ND	Responded
25286	Amsterdam	NY	Responded
25287	Minneapolis	MN	Responded
25289	Chicago	IL	Responded
25290	Champaign	IL	Responded
25291	Gainesville	GA	Not Eligible
25292	Omaha	NE	Responded
25293	Charleston	WV	Responded
25294	Savannah	GA	Responded
25295	Chattanooga	TN	No Response

CBO ID	City	State	Status
25296	Asbury Park	NJ	Responded
25297	Wenatchee	WA	Responded
25298	Sacramento	CA	No Response
25299	Jamestown	ND	No Response
25300	West Chester	PA	No Response
25301	Chicago	IL	Responded
25302	Chicago	IL	No Response
25304	Houston	TX	No Response
25305	St. Paul	MN	Responded
25306	West Lebanon	VT	Responded
25307	Georgetown	DE	Responded
25308	Covington	TN	Responded
25309	Norfolk	VA	No Response
25310	Columbus	OH	No Response
25311	Detroit	MI	Not Eligible
25312	Boston	MA	No Response
25313	Los Angeles	CA	No Response
25314	Memphis	TN	No Response
25315	Chico	CA	Responded
25316	Taylorville	IL	No Response
25317	Washington	DC	No Response
25318	Wilmington	DE	Not Eligible
25319	Brooklyn	NY	Responded
25320	New York	NY	Not Eligible
25321	Bronx	NY	Responded
25322	Houston	TX	No Response
25323	Amarillo	TX	Responded
25324	Bangor	ME	Responded
25325	Long Beach	CA	No Response
25326	Newark	NJ	Not Eligible
25327	Portland	ME	Responded
25328	Worcester	MA	No Response
25329	Philadelphia	PA	No Response
25330	Port Angeles	WA	Responded

CBO ID	City	State	Status
25331	Springfield	OH	Responded
25332	Las Vegas	NV	Responded
25333	Jeffersonville	IN	Responded
25334	Astoria	OR	No Response
25335	Flora	IL	Responded
25336	Cleveland	OH	Responded
25338	Lincoln	NE	No Response
25340	Belfast	ME	Responded
25341	Lincoln City	OR	No Response
25342	Corpus Christi	TX	Responded
25343	Dorchester	MA	Responded
25344	Charleston	IL	Responded
25345	Minot	ND	Responded
25346	Denver	CO	Responded
25347	Columbia	TN	Responded
25348	Columbus	OH	Responded
25349	Whiteville	NC	Responded
25350	Columbus	OH	Responded
25351	Columbus	OH	Responded
25352	Columbus	GA	Responded
25353	Baltimore	MD	Responded
25354	Burlington	VT	Responded
25355	Saipan	MP	Responded
25357	Oklahoma City	OK	Responded
25358	San Marcos	TX	Responded
25359	Dickinson	ND	Responded
25360	Akron	OH	Responded
25361	San Antonio	TX	Responded
25362	Conway	SC	Responded
25363	Las Vegas	NV	Responded
25364	Akron	OH	No Response
25365	Minneapolis	MN	No Response
25366	Cairo	IL	No Response
25368	Bridgeton	NJ	Responded

CBO ID	City	State	Status
25369	New Haven	CT	No Response
25370	Traverse City	MI	Responded
25371	Decatur	IL	Responded
25372	Detroit	MI	No Response
25373	San Francisco	CA	No Response
25374	Miami	FL	Responded
25375	New York	NY	No Response
25376	White Plains	MD	Responded
25377	Stockton	CA	Responded
25378	Chicago	IL	Responded
25379	Houston	TX	Responded
25380	Oak Park	IL	Responded
25381	Canton	OH	Responded
25382	West Palm Beach	FL	Responded
25383	San Francisco	CA	Not Eligible
25385	San Diego	CA	Responded
25387	Phoenix	AZ	Responded
25388	Indianapolis	IN	Responded
25389	Philadelphia	PA	Responded
25390	Hartford	CT	No Response
25391	Oak Park	IL	Responded
25392	Granite City	IL	Responded
25394	Ypsilanti	MI	Responded
25395	Corpus Christi	TX	Responded
25397	Atlantic City	NJ	Responded
25398	Hollywood	CA	No Response
25399	Kelso	WA	Responded
25400	Petersburg	VA	Responded
25401	Petersburg	VA	Responded
25402	Rockford	IL	Responded
25403	Baltimore	MD	No Response
25404	Lebanon	VA	Responded
25405	Wilmington	NC	Responded
25406	Bismarck	ND	Responded

CBO ID	City	State	Status
25407	Lawrence	KS	Responded
25408	Dallas	TX	Responded
25409	Indianapolis	IN	Responded
25410	Washington	DC	Responded
25411	Danbury	CT	Responded
25412	Montpelier	VT	Responded
25413	Dayton	OH	No Response
25414	New York	NY	Responded
25415	De Kalb	IL	No Response
25416	Wilmington	DE	Responded
25417	Wilmington	DE	No Response
25418	Dover	DE	Responded
25419	Wilmington	DE	Not Eligible
25420	Philadelphia	PA	Responded
25421	Santa Ana	CA	Responded
25422	Denton	TX	Responded
25423	Denver	CO	Responded
25424	Cranston	RI	Responded
25426	Marks	MS	Responded
25427	Palm Springs	CA	Responded
25428	Palm Springs	CA	No Response
25429	Detroit	MI	No Response
25431	Detroit	MI	Responded
25433	Lakewood	CO	Responded
25434	Stambaugh	MI	Responded
25435	Roxbury	MA	No Response
25436	Shiprock	NM	Responded
25437	Sacramento	CA	Responded
25438	Petersburg	VA	No Response
25439	Minneapolis	MN	Responded
25440	Idaho Falls	ID	Responded
25441	Ludington	MI	No Response
25442	Rockford	IL	No Response
25443	Georgetown	CA	Responded

CBO ID	City	State	Status
25444	Trenton	NJ	Duplicate
25445	Cambridge	MD	Responded
25446	Boston	MA	Responded
25447	Lawrence	KS	Responded
25448	Omaha	NE	No Response
25449	Lawrence	KS	Responded
25450	Ellsworth	ME	Responded
25451	Ellsworth	ME	Responded
25452	St. Louis	MO	Responded
25453	Wheaton	IL	No Response
25454	Downers G	IL	No Response
25455	Durham	NC	Responded
25456	West Memphis	AR	No Response
25457	Akron	OH	Responded
25458	Baltimore	MD	No Response
25459	East Boston	MA	Responded
25460	East St. Louis	IL	Responded
25461	West Covina	CA	Responded
25462	Bangor	ME	Responded
25463	San Luis Obispo	CA	Responded
25464	San Jose	CA	Responded
25465	Odessa	TX	Responded
25467	Tarboro	NC	No Response
25468	Effingham	IL	No Response
25469	Sacramento	CA	No Response
25470	Eldorado	IL	Responded
25471	Glassboro	NJ	Responded
25472	Colorado Springs	CO	Responded
25473	Arleta	CA	Responded
25474	San Jose	CA	Responded
25475	St. Petersburg	FL	No Response
25476	Denver	CO	Responded
25477	Baltimore	MD	No Response
25478	Hempstead	NY	Responded

CBO ID	City	State	Status
25479	Erie	PA	Responded
25480	Sandusky	OH	Responded
25481	Pensacola	FL	No Response
25483	Dallas	TX	No Response
25484	Arlington	VA	Responded
25485	Evanston	IL	Responded
25486	Bellingham	WA	Responded
25489	Minneapolis	MN	Responded
25490	Fredericksburg	VA	No Response
25491	Fairfax	VA	Responded
25492	Richmond	VA	Responded
25493	Bridgeton	NJ	Responded
25494	Richmond	CA	Responded
25495	Las Cruces	NM	No Response
25498	New Orleans	LA	Responded
25499	St. Louis	MO	No Response
25500	Newburgh	NY	Responded
25501	Worcester	MA	Responded
25503	San Diego	CA	Responded
25504	Camp Hill	PA	Responded
25506	Augusta	ME	Responded
25507	Philadelphia	PA	Responded
25508	Baton Rouge	LA	Responded
25509	Bridgeport	CT	Responded
25510	Richmond	VA	Responded
25511	Fargo	ND	Responded
25512	Farmington	NM	Responded
25514	Boston	MA	Responded
25515	Oakland	CA	No Response
25516	Garden City	KS	Responded
25517	Minot	ND	Responded
25518	Albuquerque	NM	No Response
25519	Sarasota	FL	No Response
25520	Lawrence	NY	Responded

CBO ID	City	State	Status
25521	Flint	MI	No Response
25523	Indianapolis	IN	Responded
25524	Fort Wayne	IN	Responded
25525	Fort Wayne	IN	Responded
25526	New York	NY	Responded
25527	Charlotte	NC	No Response
25528	Monroe	LA	Responded
25529	Mobile	AL	Responded
25530	Marion	IL	Responded
25531	Detroit	MI	Responded
25532	Baton Rouge	LA	No Response
25533	Memphis	TN	Responded
25534	Tulsa	OK	No Response
25535	Jamaica Plain	MA	Responded
25536	New York	NY	Responded
25537	Canton	IL	Responded
25538	Houston	TX	Responded
25540	Houston	TX	Responded
25541	Long Beach	CA	Responded
25542	La Marque	TX	Responded
25543	Pomeroy	WA	No Response
25544	Gary	IN	Responded
25545	East Lansing	MI	Responded
25546	Decatur	IL	No Response
25547	Ventura	CA	Responded
25548	Seattle	WA	Responded
25550	New York	NY	Responded
25551	Las Vegas	NV	Responded
25552	Fort Lauderdale	FL	Responded
25553	Kansas City	MO	No Response
25554	Garden Grove	CA	Responded
25555	Buffalo	NY	Responded
25556	Philadelphia	PA	Responded
25557	Memphis	TN	Responded

CBO ID	City	State	Status
25558	Birmingham	AL	Responded
25560	Denver	CO	Responded
25561	Denver	CO	No Response
25562	San Francisco	CA	No Response
25563	Barton	VT	No Response
25564	Kansas City	MO	Responded
25565	Kansas City	KS	No Response
25566	Detroit	MI	No Response
25567	North Platte	NE	Responded
25568	Grand Forks	ND	No Response
25569	Grand Island	NE	Responded
25570	Grand Rapids	MI	Responded
25571	New York	NY	Responded
25572	Suttons Bay	MI	Responded
25573	Ephrata	WA	Responded
25574	Aberdeen	WA	Responded
25575	Worcester	MA	No Response
25577	Lac du Flambeau	WI	Responded
25580	Brooklyn	NY	Responded
25582	Monroe	LA	Responded
25583	Chelsea	MA	No Response
25585	Xenia	OH	Responded
25586	New York	NY	Responded
25587	Greenwood	MS	No Response
25588	Morris	IL	Responded
25589	Kansas City	MO	No Response
25590	Kansas City	MO	Duplicate
25591	Greensboro	NC	Responded
25592	Corpus Christi	TX	Responded
25593	Gardner	MA	Responded
25594	San Francisco	CA	Responded
25595	San Francisco	CA	Responded
25596	Mattapan	MA	Responded
25597	Brooklyn	NY	No Response

CBO ID	City	State	Status
25598	Miami	FL	No Response
25599	Dorchester	MA	Responded
25601	New York	NY	Responded
25603	Rockford	IL	Responded
25604	Sacramento	CA	Responded
25605	Houston	TX	Responded
25606	Houston	TX	Responded
25607	Hartford	CT	Responded
25608	Hartford	CT	Responded
25609	Hartford	CT	Responded
25610	Gloucester	MA	Responded
25611	Worcester	MA	Responded
25612	Albuquerque	NM	Responded
25613	Milwaukee	WI	No Response
25614	Fort Worth	TX	Responded
25616	Passaic	NJ	No Response
25617	Bronx	NY	Responded
25618	Nacogdoches	TX	Responded
25621	Beverly	MA	Refusal
25622	Augusta	ME	No Response
25623	Peoria	IL	Responded
25624	Paducah	KY	Responded
25625	Alexandria	VA	No Response
25626	Chicago	IL	Responded
25627	Knoxville	TN	Responded
25628	St. Louis	MO	Not Eligible
25629	Washington	DC	No Response
25630	Ann Arbor	MI	Responded
25631	Pasadena	CA	Responded
25632	Minneapolis	MN	Responded
25633	Kewanee	IL	Responded
25634	Detroit	MI	No Response
25635	New York	NY	No Response
25636	St. Johnsbury	VT	Responded

CBO ID	City	State	Status
25637	Hillcrest Heights	MD	No Response
25638	Largo	MD	No Response
25639	Owings	MD	Responded
25640	Denton	MD	Responded
25641	New York	NY	No Response
25642	Cumberland	MD	Responded
25643	Largo	MD	Responded
25644	Oakland	CA	Responded
25647	Hartford	CT	No Response
25648	Little Rock	AR	No Response
25649	Baltimore	MD	No Response
25650	Washington	DC	Duplicate
25651	College Park	MD	No Response
25652	Hollywood	FL	Responded
25653	Grand Rapids	MI	Responded
25654	Buffalo	NY	Responded
25655	New Haven	CT	Responded
25656	Eugene	OR	No Response
25657	Oakland	CA	Not Eligible
25658	Tulsa	OK	No Response
25659	Santa Cruz	CA	Responded
25660	Petoskey	MI	Responded
25661	Traverse City	MI	Responded
25662	Ypsilanti	MI	Responded
25663	Grand Rapids	MI	Responded
25665	Takoma Park	MD	No Response
25666	Bismarck	ND	Responded
25667	Baltimore	MD	Responded
25668	San Antonio	TX	Responded
25669	Baltimore	MD	Not Eligible
25670	Wilmington	DE	No Response
25671	Alexandria	VA	No Response
25673	New York	NY	Responded
25675	Houston	TX	Responded

CBO ID	City	State	Status
25676	Chicago	IL	Duplicate
25677	Chicago	IL	Responded
25678	Chicago	IL	Duplicate
25679	San Francisco	CA	No Response
25680	Peekskill	NY	Responded
25681	Cleveland	OH	Responded
25682	Jackson	TN	No Response
25683	New Britain	CT	Responded
25684	Richmond	VA	Responded
25686	Arcata	CA	Responded
25687	New York	NY	No Response
25688	Wichita	KS	Responded
25689	Bronx	NY	Responded
25690	Caldwell	ID	Not Eligible
25691	Washington	DC	Responded
25692	Burlington	VT	No Response
25693	Springfield	IL	Responded
25694	Houston	TX	Not Eligible
25695	Wichita	KS	Responded
25696	Tulsa	OK	Responded
25698	Bloomington	IN	Responded
25699	Indianapolis	IN	Responded
25700	Minneapolis	MN	Responded
25702	Riverside	CA	Responded
25703	Ontario	CA	No Response
25704	Utica	NY	No Response
25705	San Francisco	CA	Responded
25706	San Francisco	CA	Responded
25707	Newark	NJ	Responded
25708	Salt Lake City	UT	No Response
25709	Baltimore	MD	No Response
25710	Fairbanks	AK	Responded
25711	Seattle	WA	No Response
25712	Chicago	IL	Not Eligible

CBO ID	City	State	Status
25716	Coupeville	WA	Responded
25717	Murphysboro	IL	No Response
25718	Wilmington	DE	No Response
25719	Providence	RI	Not Eligible
25720	Jacksonville	FL	Responded
25721	Port Townsend	WA	Responded
25722	Lakewood	CO	Responded
25723	Golden	CO	Responded
25725	Mount Vernon	IL	No Response
25726	Metairie	LA	Responded
25727	Jersey City	NJ	Responded
25728	Jersey City	NJ	No Response
25729	Galena	IL	Responded
25730	Providence	RI	No Response
25731	Olathe	KS	No Response
25733	San Pedro	CA	Responded
25735	Junction City	KS	Responded
25736	Boston	MA	No Response
25737	Los Angeles	CA	Responded
25738	Buffalo	NY	Responded
25739	Aurora	IL	Responded
25740	Bradley	IL	Responded
25742	Kansas City	KS	Responded
25743	Manhattan	KS	No Response
25744	Honolulu	HI	Responded
25745	Dover	DE	Responded
25746	Baraga	MI	Responded
25747	Nashville	TN	Responded
25748	Burlington	VT	Responded
25749	Ellensburg	WA	Responded
25750	Wichita	KS	Responded
25751	Galesburg	IL	Responded
25752	New Orleans	LA	No Response
25753	Lincoln	NE	Responded

CBO ID	City	State	Status
25754	Waukesha	WI	Responded
25756	Oakland	CA	Duplicate
25758	Los Angeles	CA	Responded
25760	Dallas	TX	Responded
25761	Painesville	OH	Responded
25762	Waukegan	IL	No Response
25763	Devils Lake	ND	Responded
25764	Ashland	OR	No Response
25765	Beaumont	TX	Responded
25766	East Lansing	MI	Responded
25767	Oakland	CA	Responded
25768	Cheyenne	WY	Responded
25769	Laredo	TX	No Response
25770	Ottawa	IL	Responded
25771	Wilmington	DE	Responded
25772	Richmond	VA	Responded
25776	New London	CT	Responded
25777	Lawrenceville	IL	No Response
25778	Leavenworth	KS	Responded
25779	Marianna	AR	Responded
25780	Dixon	IL	Responded
25781	Cass Lake	MN	Responded
25782	Wise	VA	No Response
25783	New York	NY	No Response
25784	San Diego	CA	Responded
25785	Chehalis	WA	No Response
25787	Indianapolis	IN	No Response
25789	Honolulu	HI	Responded
25790	Davenport	WA	No Response
25791	Lincoln	NE	Responded
25792	San Diego	CA	No Response
25793	Northfield	IL	No Response
25794	Pontiac	IL	No Response
25797	Lorain	OH	Responded

CBO ID	City	State	Status
25798	Santa Fe Springs	CA	Responded
25799	Louisville	KY	No Response
25800	Charleston	SC	Responded
25801	Lowell	MA	Responded
25802	Lower Brule	SD	Responded
25803	New York	NY	No Response
25804	New York	NY	Responded
25805	Lubbock	TX	Responded
25806	Brooklyn	NY	Responded
25807	Sterling	IL	No Response
25808	St. Louis	MO	No Response
25810	Urbana	IL	Responded
25811	Decatur	IL	Responded
25812	Carlinville	IL	Responded
25813	Edwardsville	IL	Responded
25814	Youngstown	OH	No Response
25815	Youngstown	OH	Responded
25816	Augusta	ME	No Response
25817	Lihue	HI	Responded
25818	Mansfield	OH	Responded
25819	Providence	RI	Responded
25820	Houston	TX	Not Eligible
25821	Salem	IL	No Response
25822	Nogales	AZ	Responded
25823	Vineland	NJ	Not Eligible
25824	Indianapolis	IN	Responded
25825	Shelton	WA	Responded
25826	Wasilla	AK	No Response
25827	Philadelphia	PA	Responded
25828	Wailuku	HI	Responded
25829	Macomb	IL	Responded
25830	Woodstock	IL	No Response
25831	Bloomington	IL	Responded
25832	Bloomington	IL	Responded

CBO ID	City	State	Status
25833	Sacramento	CA	No Response
25834	New York	NY	No Response
25835	Augusta	ME	Not Eligible
25836	Toledo	OH	Responded
25837	Memphis	TN	Responded
25838	Detroit	MI	Responded
25839	Houston	TX	Not Eligible
25840	Peoria	IL	Responded
25841	Denver	CO	No Response
25842	Cleveland	OH	Not Eligible
25843	Aledo	IL	Responded
25844	Trenton	NJ	Not Eligible
25845	Meriden	CT	Responded
25846	Brunswick	ME	Responded
25847	Denver	CO	Duplicate
25848	Littleton	CO	Responded
25849	Golden	CO	Responded
25851	Charlotte	NC	No Response
25852	Sacramento	CA	No Response
25855	Norwalk	CT	Not Eligible
25856	Rockland	ME	Responded
25857	Elmsford	NY	Responded
25858	Parkersburg	WV	Responded
25859	Macon	GA	Responded
25860	New Brunswick	NJ	Not Eligible
25861	Middletown	NY	Responded
25864	Milwaukee	WI	No Response
25865	Majuro	Ma	No Response
25866	Minneapolis	MN	No Response
25867	Minnneapolis	MN	Responded
25868	Minneapolis	MN	Responded
25871	St. Paul	MN	Responded
25872	Minneapolis	MN	No Response
25873	Norfolk	VA	Responded

CBO ID	City	State	Status
25876	Chicago	IL	Responded
25877	New York	NY	Responded
25879	San Francisco	CA	Responded
25880	Swanton	VT	Responded
25882	Jackson	MS	No Response
25885	Vineland	NJ	Responded
25886	Mobile	AL	Responded
25887	Mobile	AL	Responded
25888	San Francisco	CA	Not Eligible
25889	Chester	IL	No Response
25890	Fitchburg	MA	Responded
25892	Bronx	NY	No Response
25893	Salinas	CA	No Response
25894	Montgomery	AL	Responded
25895	Norristown	PA	No Response
25896	Coffeyville	KS	Responded
25898	Houston	TX	Responded
25899	Jacksonville	IL	No Response
25900	Tulsa	OK	No Response
25902	Thomasville	NC	Responded
25903	New York	NY	No Response
25904	Buckhannon	WV	Responded
25905	Sutton	WV	Responded
25906	Boise	ID	Responded
25907	Miami	FL	Duplicate
25908	Jackson	MS	Responded
25909	San Antonio	TX	No Response
25911	Portland	OR	Responded
25912	Anchorage	AK	Responded
25913	Pocatello	ID	Responded
25915	Albuquerque	NM	Responded
25917	North Platte	NE	Responded
25918	Nashville	TN	No Response
25919	Hempstead	NY	Duplicate

CBO ID	City	State	Status
25920	Hempstead	NY	Responded
25921	East Meadow	NY	Responded
25924	Washington	DC	Responded
25927	Oakland	CA	No Response
25928	Baltimore	MD	Not Eligible
25929	Jackson	MS	No Response
25930	Chinle	AZ	No Response
25931	Omaha	NE	Responded
25932	Springfield	OH	Refusal
25933	Cleveland	OH	Responded
25934	Detroit	MI	Responded
25935	Auburn	NE	Responded
25936	Portland	OR	Responded
25937	Carson City	NV	No Response
25938	Milwaukee	WI	Responded
25940	Fallon	NV	Not Eligible
25941	New Haven	CT	Responded
25942	Houston	TX	Responded
25943	Paterson	NJ	Responded
25944	Trenton	NJ	Responded
25945	Trenton	NJ	Responded
25946	San Francisco	CA	Not Eligible
25948	New London	CT	Responded
25949	Newport	RI	No Response
25950	Brooklyn	NY	Responded
25951	New York	NY	No Response
25952	Brooklyn	NY	No Response
25953	Bronx	NY	Responded
25954	Brooklyn	NY	Responded
25956	New York	NY	No Response
25957	Flushing	NY	Responded
25958	New York	NY	Not Eligible
25959	New York	NY	No Response
25960	Newark	OH	Responded

CBO ID	City	State	Status
25961	Baltimore	MD	No Response
25963	Norfolk	VA	Responded
25964	Lewiston	ID	Responded
25965	Gainesville	FL	No Response
25966	Wahpeton	ND	Responded
25967	Fargo	ND	Responded
25969	Passaic	NJ	Responded
25970	Cleveland	OH	Responded
25971	Colville	WA	Responded
25972	Ogden	UT	Responded
25973	Springfield	MA	Responded
25974	New York	NY	Responded
25975	Reno	NV	Responded
25977	Annandale	VA	No Response
25978	Kalamazoo	MI	No Response
25980	Charlottesville	VA	No Response
25981	Steamboat Springs	CO	Responded
25982	Torrington	CT	Responded
25983	Norwalk	CT	Responded
25984	Jackson	MS	No Response
25985	Baltimore	MD	Not Eligible
25986	Wilson	NC	Responded
25987	Oak Park	IL	Responded
25988	Oak Park	IL	No Response
25989	Orangeburg	SC	Responded
25990	Indianapolis	IN	Responded
25991	Newark	DE	Not Eligible
25992	Washington	DC	Not Eligible
25993	Oregon	IL	Responded
25994	Racine	WI	Responded
25995	Okanogan	WA	Responded
25996	Philadelphia	PA	No Response
25997	Muncie	IN	Responded
25999	New London	CT	No Response

CBO ID	City	State	Status
26000	Corvallis	OR	Not Eligible
26001	Akron	OH	No Response
26002	New York	NY	Responded
26003	Ossining	NY	Responded
26004	Columbus	OH	Responded
26007	Greenville	MS	Responded
26008	Denver	CO	Responded
26009	Champaign	IL	No Response
26010	Westminster	MD	Responded
26011	Towson	MD	No Response
26012	Baltimore	MD	No Response
26013	Daytona Beach	FL	Responded
26014	Portland	ME	Responded
26015	Burlington	VT	Responded
26016	Portland	OR	Responded
26017	Houston	TX	Responded
26018	Normal	IL	Responded
26019	Amarillo	TX	Responded
26020	South Bend	WA	Responded
26021	Jersey City	NJ	No Response
26022	Columbia	SC	Responded
26023	Gering	NE	Responded
26024	Coeur d'Alene	ID	No Response
26026	Paterson	NJ	Responded
26027	Nashville	TN	Responded
26028	Cheyenne	WY	No Response
26029	Milwaukee	WI	Responded
26030	Roswell	NM	Responded
26031	Florence	SC	Responded
26032	Newport News	VA	Responded
26038	Philadelphia	PA	Responded
26039	Peoria	IL	Responded
26040	Midland	TX	Responded
26041	McGehee	AR	Responded

CBO ID	City	State	Status
26042	Seattle	WA	No Response
26043	Philadelphia	PA	Duplicate
26045	Philadelphia	PA	Responded
26046	Philadelphia	PA	Not Eligible
26047	Phoenix	AZ	Responded
26048	Tacoma	WA	Responded
26049	Minneapolis	MN	No Response
26050	Greenville	NC	Responded
26052	Pittsburg	CA	Responded
26053	Plainfield	NJ	Not Eligible
26054	St. Louis	MO	No Response
26055	McAllen	TX	Responded
26056	Trenton	NJ	Responded
26058	Grand Rapids	MI	Responded
26059	Salinas	CA	No Response
26060	Fresno	CA	No Response
26061	Ann Arbor	MI	Responded
26062	Petoskey	MI	Responded
26064	Concord	CA	Responded
26065	New Haven	CT	Responded
26066	Dallas	TX	No Response
26067	Wilmington	DE	No Response
26068	Nashville	TN	Responded
26069	Plainfield	NJ	Not Eligible
26070	Peoria	IL	No Response
26071	Houston	TX	Responded
26072	New Orleans	LA	Responded
26073	Albuquerque	NM	Responded
26074	Hempstead	NY	Responded
26075	South Bend	IN	Responded
26077	Tulsa	OK	Responded
26078	Hampton	VA	Responded
26079	Tucson	AZ	Responded
26080	Sarasota	FL	No Response

CBO ID	City	State	Status
26081	Canton	OH	Responded
26082	Cincinnati	OH	Responded
26083	Toledo	OH	Responded
26084	San Francisco	CA	Responded
26085	Pontiac	MI	No Response
26086	Portsmouth	OH	Responded
26087	Portsmouth	OH	Responded
26088	Portsmouth	VA	Responded
26089	New Orleans	LA	No Response
26090	New York	NY	No Response
26092	Atlanta	GA	Responded
26093	Rancocas	NJ	Not Eligible
26094	Willimantic	CT	Responded
26095	Charlotte	NC	Responded
26096	Chicago	IL	Responded
26097	Charleston	WV	Not Eligible
26098	Decatur	IL	No Response
26099	Manassas	VA	Responded
26100	Bristol	PA	Not Eligible
26101	Princeton	NJ	Responded
26102	Princeton	NJ	Responded
26103	Brentwood	TN	No Response
26104	Westchester	IL	No Response
26106	Central Falls	RI	Responded
26107	St. Louis	MO	Responded
26108	Nashville	TN	Responded
26109	Atlanta	GA	Responded
26110	East Orange	NJ	Responded
26111	Staten Island	NY	Responded
26112	Atlanta	GA	No Response
26113	Salt Lake City	UT	Responded
26114	Madison	WI	Responded
26115	New York	NY	Responded
26116	Boston	MA	Responded

CBO ID	City	State	Status
26117	Boston	MA	Responded
26118	Bronx	NY	Responded
26119	Springfield	IL	No Response
26121	Provincetown	MA	No Response
26122	Perth Amboy	NJ	No Response
26124	Rochester	NY	Responded
26125	Rock Island	IL	No Response
26126	Rock Island	IL	No Response
26127	Gadsden	AL	Responded
26128	Waycross	GA	Responded
26129	Canton	IL	Responded
26131	Oxford	MS	Responded
26132	Perth Amboy	NJ	Responded
26133	Los Angeles	CA	Responded
26135	Oklahoma City	OK	No Response
26136	Denver	CO	Responded
26137	Manhattan	KS	Responded
26138	Joilet	IL	Responded
26139	Rochester	NY	Responded
26140	Bridgeport	CT	No Response
26141	Albuquerque	NM	Not Eligible
26143	Hutchinson	KS	Responded
26144	Elgin	IL	Responded
26145	Brooklyn	NY	Responded
26146	Dallas	TX	No Response
26147	Philadelphia	PA	No Response
26148	Kansas City	KS	Responded
26149	Wahpeton	ND	Responded
26150	Richmond	VA	Responded
26151	Richmond	VA	Responded
26152	Rockingham	NC	Responded
26153	Manhattan	KS	Responded
26154	Jacksonville	FL	Responded
26155	Lumberton	NC	No Response

CBO ID	City	State	Status
26156	Rock Island	IL	Responded
26157	Rocky Mount	NC	Responded
26159	Bridgeton	NJ	Responded
26160	Twin Falls	ID	Responded
26161	Springfield	IL	No Response
26163	San Francisco	CA	Responded
26164	San Francisco	CA	Duplicate
26165	San Francisco	CA	Responded
26166	San Francisco	CA	No Response
26167	San Francisco	CA	No Response
26168	San Francisco	CA	Responded
26169	San Francisco	CA	Responded
26170	San Francisco	CA	Responded
26172	Vancouver	WA	Responded
26173	Sacramento	CA	No Response
26176	New York	NY	Not Eligible
26177	Houston	TX	Responded
26178	Saginaw	MI	Responded
26179	Center	CO	No Response
26181	Salina	KS	Responded
26182	Salt Lake City	UT	No Response
26183	Watsonville	CA	No Response
26184	Kansas City	MO	Responded
26185	San Angelo	TX	No Response
26186	San Antonio	TX	No Response
26187	San Diego	CA	Not Eligible
26188	San Diego	CA	Responded
26189	San Diego	CA	Responded
26190	Stockton	CA	Responded
26191	Durango	CO	No Response
26192	Friday Harbor	WA	No Response
26193	Alamosa	CO	Responded
26194	San Ysidro	CA	Responded
26195	Santa Cruz	CA	Responded

CBO ID	City	State	Status
26196	Tesuque	NM	Responded
26197	Santa Monica	CA	Responded
26199	Sault Ste. Marie	MI	Responded
26200	Houston	TX	No Response
26201	Schenectady	NY	Responded
26202	Pocatello	ID	No Response
26203	Seattle	WA	Responded
26204	Little Rock	AR	Responded
26205	Baltimore	MD	Responded
26206	Selma	AL	Responded
26208	Cavendish	VT	Responded
26209	Oakland	CA	Responded
26210	Washington	DC	Responded
26211	Juneau	AK	No Response
26212	Greenbelt	MD	Responded
26213	Topeka	KS	Responded
26214	Stamford	CT	No Response
26215	Tallahassee	FL	Responded
26217	Chicago	IL	No Response
26218	Sterling	IL	Responded
26219	Garnder	IL	No Response
26223	Milwaukee	WI	Responded
26224	Mount Vernon	WA	Responded
26225	Salt Lake City	UT	Responded
26226	Tyler	TX	Responded
26227	Everett	WA	No Response
26228	Providence	RI	Responded
26229	Moscow	ID	Responded
26230	Manhattan Beach	CA	Responded
26231	Miami Beach	FL	Responded
26232	Brooklyn	NY	Responded
26233	Bluefield	WV	No Response
26234	Coos Bay	OR	No Response
26235	Bridgeton	NJ	Responded

CBO ID	City	State	Status
26236	Atlantic City	NJ	Responded
26237	Lubbock	TX	Responded
26239	Laredo	TX	Responded
26240	Corpus Christi	TX	Responded
26241	Lyons	GA	Responded
26242	Natalbany	LA	Responded
26243	Laramie	WY	Not Eligible
26244	Suitland	MD	No Response
26245	Tucson	AZ	Responded
26246	Inglewood	CA	No Response
26247	Dayton	OH	Responded
26248	Colorado Springs	CO	Responded
26249	Alton	IL	No Response
26251	Carbondale	IL	Responded
26252	Carbondale	IL	No Response
26253	Las Vegas	NV	No Response
26254	Ullin	IL	No Response
26255	Ignacio	CO	Not Eligible
26256	Raleigh	NC	Responded
26257	Lake Charles	LA	Responded
26258	Lafayette	LA	Responded
26259	Rocky Mount	NC	No Response
26260	Leominster	MA	Responded
26261	Atlantic City	NJ	Responded
26262	Spartanburg	SC	Responded
26264	Longview	TX	Responded
26266	Burlington	VT	No Response
26268	Spokane	WA	Duplicate
26269	Spokane	WA	No Response
26270	Bronx	NY	Responded
26271	Belleville	IL	Responded
26272	Newark	NJ	Duplicate
26273	Newark	NJ	Responded
26274	New Orleans	LA	No Response

CBO ID	City	State	Status
26275	St. Louis	MO	Responded
26276	New York	NY	Not Eligible
26277	New York	NY	No Response
26278	Milwaukee	WI	Not Eligible
26279	Grand Rapids	MI	Responded
26280	Petersburg	VA	No Response
26281	New York	NY	Responded
26282	Stamford	CT	Responded
26284	Staten Island	NY	Responded
26285	Staten Island	NY	No Response
26286	Winston-Salem	NC	Responded
26287	Freeport	IL	Responded
26288	Lorton	VA	Responded
26289	Olympia	WA	Responded
26291	Norfolk	VA	Not Eligible
26292	Seattle	WA	Responded
26293	Seattle	WA	Duplicate
26294	Nashville	TN	Responded
26295	Staten Island	NY	Responded
26296	Vero Beach	FL	Responded
26297	Toledo	OH	Responded
26298	Hauppauge	NY	Responded
26299	Houston	TX	Not Eligible
26300	Sumter	SC	No Response
26301	Rehoboth Beach	DE	Not Eligible
26302	Caldwell	ID	No Response
26303	Kansas City	MO	Responded
26305	Los Angeles	CA	Responded
26306	Tacoma	WA	No Response
26307	Providence	RI	No Response
26308	Tampa	FL	No Response
26310	Springfield	MA	Responded
26311	Fort Worth	TX	Responded
26312	Reseda	CA	Responded

CBO ID	City	State	Status
26313	Peoria	IL	No Response
26314	Chicago	IL	No Response
26315	Taylor	MI	Responded
26316	Taylor	MI	Duplicate
26317	Tremont	IL	Responded
26318	Haverhill	MA	No Response
26319	Dalton	GA	No Response
26320	Raleigh	NC	Responded
26321	San Francisco	CA	Responded
26322	Phoenix	AZ	Responded
26323	Hilton Head Island	SC	No Response
26324	Portland	ME	Responded
26325	Gary	IN	Responded
26326	Philadelphia	PA	Responded
26327	Salt Lake City	UT	Responded
26329	Minneapolis	MN	Responded
26333	New York	NY	No Response
26334	Cleveland	OH	Responded
26335	Philadelphia	PA	No Response
26336	Richmond	VA	No Response
26337	Camden	NJ	No Response
26338	Paterson	NJ	No Response
26339	Houston	TX	No Response
26340	Jersey City	NJ	No Response
26341	New Brunswick	NJ	No Response
26342	Newark	NJ	No Response
26343	New Brunswick	NJ	Not Eligible
26344	Houston	TX	No Response
26346	Los Angeles	CA	Responded
26347	Wilmington	DE	Responded
26348	Salt Lake City	UT	Responded
26349	Shreveport	LA	Responded
26350	Providence	RI	Responded
26351	Indianapolis	IN	Responded

CBO ID	City	State	Status
26352	Truth or Consequences	NM	Responded
26355	St. Croix	VI	Responded
26356	Miami	FL	No Response
26357	Kents Store	VA	Responded
26358	Cleveland	OH	Not Eligible
26359	Gloucester	VA	No Response
26360	Olympia	WA	Responded
26361	Union City	CA	Responded
26362	Norfolk	VA	Responded
26364	Cheyenne	WY	Responded
26365	Topeka	KS	Responded
26366	Canton	OH	Responded
26367	Urbana	IL	No Response
26368	Fremont	CA	Responded
26369	Newton Grove	NC	Responded
26370	Huntington	WV	Responded
26371	Evansville	IN	Responded
26372	Greensboro	NC	Responded
26373	Beaumont	TX	No Response
26374	Sioux Falls	SD	Responded
26375	Minneapolis	MN	Responded
26376	Bellows Falls	VT	No Response
26377	San Francisco	CA	No Response
26378	San Francisco	CA	Responded
26379	San Antonio	TX	Responded
26380	Seattle	WA	Responded
26381	Seattle	WA	Responded
26382	Houston	TX	No Response
26383	San Pablo	CA	Responded
26384	Milwaukee	WI	No Response
26385	Brooklyn	NY	Responded
26386	Sterling	IL	Not Eligible
26387	Cheyenne	WY	Responded
26388	Trinidad	CA	Responded

CBO ID	City	State	Status
26389	Garden City	KS	Responded
26390	Killeen	TX	Responded
26391	Rock Hill	SC	Responded
26394	Salem	OR	Responded
26395	Hartford	CT	No Response
26396	Newark	DE	Not Eligible
26397	Minneapolis	MN	Responded
26398	Minneapolis	MN	No Response
26399	Grand Forks	ND	Responded
26400	Hattiesburg	MS	No Response
26402	Williston	ND	Responded
26403	Laurens	SC	Responded
26404	Chicago	IL	No Response
26406	Hartford	CT	No Response
26407	Madison	WI	Responded
26408	Norfolk	VA	Duplicate
26409	Norfolk	VA	No Response
26410	Omaha	NE	Responded
26411	White Plains	NY	Responded
26412	Denver	CO	Responded
26414	Houston	TX	Not Eligible
26415	Salt Lake City	UT	No Response
26416	Richmond	VA	No Response
26417	Richmond	VA	Responded
26418	McAllen	TX	No Response
26419	Valley City	ND	Responded
26420	North Hollywood	CA	Responded
26421	Grand Forks	ND	No Response
26422	Hollywood	CA	Responded
26424	Midvale	UT	Responded
26425	Danville	IL	No Response
26426	Danville	IL	Responded
26427	Burlington	VT	Responded
26428	Montpelier	VT	Responded

CBO ID	City	State	Status
26429	St. Croix	VI	Duplicate
26430	Victoria	TX	No Response
26431	Crystal City	TX	Responded
26432	Bronx	NY	Responded
26434	Oak Park	MI	No Response
26435	Vista	CA	Responded
26436	Asbury Park	NJ	Responded
26437	Salt Lake City	UT	Responded
26438	Louisville	KY	Responded
26439	Salt Lake City	UT	Duplicate
26440	Arlington	TX	No Response
26441	Institute	WV	Responded
26442	Casper	WY	No Response
26443	Cheyenne	WY	No Response
26444	Mount Carmel	IL	Responded
26445	Waco	TX	Responded
26446	Cathlamet	WA	No Response
26447	Walla Walla	WA	Responded
26449	Nashville	IL	Responded
26450	Reno	NV	Responded
26451	Waterbury	CT	Responded
26452	Los Angeles	CA	No Response
26453	Little Rock	AR	No Response
26455	Greeley	CO	No Response
26456	Flint	MI	No Response
26457	Los Angeles	CA	Responded
26458	Grand Junction	CO	Responded
26459	Kailua-Kona	HI	Responded
26460	Oakland	CA	No Response
26461	St.Paul	MN	Responded
26462	Fresno	CA	Responded
26463	Valhalla	NY	Responded
26464	Chadron	NE	Responded
26465	Macomb	IL	No Response

CBO ID	City	State	Status
26466	East Wilton	ME	Responded
26467	Asheville	NC	Responded
26468	Chicago	IL	Responded
26470	Bellingham	WA	Responded
26471	Morrison	IL	Responded
26472	Colfax	WA	Responded
26474	Whittier	CA	Responded
26475	Arabi	LA	No Response
26476	Wichita	KS	No Response
26477	Wichita	KS	Responded
26478	Wilkes-Barre	PA	Responded
26479	Joilet	IL	Responded
26480	Norwich	CT	Responded
26481	New York	NY	No Response
26483	Williamsburg	VA	Not Eligible
26484	Georgetown	TX	Responded
26485	Willimantic	CT	Responded
26486	Rockford	IL	Responded
26488	Lebanon	NH	Responded
26489	Indianapolis	IN	No Response
26490	Wichita Falls	TX	Responded
26491	Defiance	OH	No Response
26492	Baltimore	MD	Responded
26495	New Orleans	LA	Responded
26496	Burlington	VT	Responded
26497	Portland	OR	Responded
26499	Largo	MD	Not Eligible
26501	Eureka	IL	No Response
26503	Dickinson	ND	Responded
26504	Kansas City	KS	Responded
26505	Yakima	WA	Responded
26506	New Haven	CT	Responded
26507	New Haven	CT	No Response
26508	Nashville	TN	Responded

CBO ID	City	State	Status
26509	Chicago	IL	No Response
26510	York	PA	Responded
26511	Youngstown	OH	Responded
26512	Youngstown	OH	Responded
26514	Albuquerque	NM	No Response
26515	Bellevue	WA	Not Eligible
26516	Inkster	MI	Responded
26517	Philadelphia	PA	Duplicate
26518	Atlanta	GA	Responded
26519	Seattle	WA	Responded
26520	Houston	TX	Duplicate
26521	Houston	TX	Responded
26522	Lincoln	NE	Responded
26523	Shreveport	LA	Responded
26524	Des Moines	IA	Responded
26525	Davenport	IA	Responded
26526	Des Moines	IA	No Response
26527	Sioux City	IA	Responded
26528	Iowa City	IA	Responded
26529	Cedar Rapids	IA	Responded
26530	Des Moines	IA	Responded
26531	Ames	IA	Not Eligible
26532	Denver	CO	Responded
26541	Browning	MT	No Response
26542	Bozeman	MT	Responded
26543	Great Falls	MT	Responded
26544	Butte	MT	Responded
26545	Lewistown	MT	Responded
26546	Elmo	MT	No Response
26547	Crow Agency	MT	No Response
26548	Glendive	MT	Responded
26549	Billings	MT	No Response
26550	Billings	MT	Responded
26551	Kalispell	MT	Responded

CBO ID	City	State	Status
26552	Harlem	MT	No Response
26553	Poplar	MT	Responded
26554	Havre	MT	No Response
26555	Polson	MT	Responded
26556	Helena	MT	Responded
26557	Helena	MT	No Response
26558	Missoula	MT	Responded
26559	Missoula	MT	No Response
26560	Lame Deer	MT	No Response
26561	Box Elder	MT	No Response
26562	Wolf Point	MT	No Response
35025	New York	NY	Responded
35049	New Haven	CT	Responded
35074	New York	NY	Responded
35093	Anchorage	AK	No Response
35109	Los Angeles	CA	Responded
35117	St. Thomas	VI	Responded
35143	New York	NY	Responded
35147	Oakland	CA	Responded
35154	San Juan	PR	Responded
35157	Houston	TX	Responded
35182	Evanston	IL	Responded
35193	San Francisco	CA	No Response
35198	St. Louis	MO	Responded
35213	Houston	TX	Responded
35274	Milwaukee	WI	No Response
35288	Arecibo	PR	Responded
35303	Chicago	IL	Responded
35367	Detroit	MI	Responded
35384	West Palm Beach	FL	No Response
35386	Loiza	PR	Responded
35396	Cidra	PR	Responded
35425	Palikir, Pohnpei	FM	No Response
35482	Mayaguez	PR	Responded

CBO ID	City	State	Status
35488	New York	NY	Responded
35505	San Juan	PR	No Response
35539	San Juan	PR	Responded
35549	New York	NY	No Response
35579	Bridgeport	CT	Responded
35602	New York	NY	Responded
35619	San Francisco	CA	Responded
35645	Burlington	VT	Responded
35646	New York	NY	No Response
35672	Jersey City	NJ	No Response
35674	New York	NY	Responded
35701	San Juan	PR	No Response
35713	San Francisco	CA	Responded
35741	Kansas City	MO	Responded
35755	Oakland	CA	Responded
35757	Washington	DC	Responded
35759	Guaynabo	PR	No Response
35775	Hartford	CT	No Response
35786	Newark	NJ	Responded
35788	Brooklyn	NY	Responded
35795	Miami	FL	Responded
35850	Washington	DC	No Response
35853	Denver	CO	Responded
35862	Mayaguez	PR	Responded
35869	Minneapolis	MN	No Response
35870	Minneapolis	MN	Responded
35875	Los Angeles	CA	Responded
35883	Missoula	MT	No Response
35897	Houston	TX	Duplicate
35910	Boston	MA	No Response
35914	Houston	TX	No Response
35939	Memphis	TN	Responded
35955	Bronx	NY	Responded
35962	New Orleans	LA	Responded

CBO ID	City	State	Status
35976	Arlington	VA	Responded
35998	Fayetteville	NC	Responded
36034	Seattle	WA	Responded
36035	St. Petersburg	FL	Responded
36036	Santa Fe	NM	No Response
36037	Brooklyn	NY	No Response
36057	El Paso	TX	Responded
36076	New York	NY	No Response
36105	Elizabeth	NJ	Responded
36120	Culver City	CA	No Response
36123	Chicago	IL	Responded
36130	Washington	DC	Responded
36142	Dallas	TX	Responded
36175	Washington	DC	No Response
36198	Washington	DC	No Response
36207	New York	NY	Responded
36238	Chicago	IL	No Response
36265	Los Angeles	CA	Responded
36290	San Francisco	CA	No Response
36330	Philadelphia	PA	Responded
36353	Providence	RI	No Response
36354	Sunny Isles	VI	Responded
36413	Washington	DC	No Response
36433	St. Croix	VI	Responded
36448	Houston	TX	No Response
36473	Washington	DC	No Response
36482	New York	NY	No Response
36498	New York	NY	Responded
36500	Philadelphia	PA	Responded
36533	Oakland	CA	No Response
36534	Oakland	CA	No Response
36535	Philadelphia	PA	Responded
36536	Philadelphia	PA	No Response

Appendix D
Rural (non-MSA) and Urban (MSA) CBOs
by State

State	Urban	Rural	Total
AK	6	3	9
AL	12	1	13
AR	7	2	9
AZ	8	2	10
CA	128	2	130
CO	24	4	28
CT	0	36	36
DC	17	0	17
DE	13	2	15
FL	37	2	39
FM	0	1	1
GA	15	5	20
GU	0	1	1
HI	2	4	6
IA	9	0	9
ID	5	5	10
IL	88	39	127
IN	22	1	23
KS	19	11	30
KY	4	1	5
LA	24	1	25
MA	3	35	38
MD	40	2	42
ME	0	16	16
MI	39	9	48
MN	24	1	25
MO	17	1	18
MP	0	1	1
MS	7	6	13
MT	6	17	23
NC	20	7	27
ND	8	11	19

State	Urban	Rural	Total
NE	8	8	16
NH	0	1	1
NJ	41	0	41
NM	11	5	16
NV	7	1	8
NY	123	1	124
OH	45	5	50
OK	8	0	8
OR	9	5	14
PA	32	0	32
PR	12	0	12
PW	0	1	1
RI	11	1	12
SC	9	3	12
SD	1	1	2
TN	17	1	18
TX	85	3	88
UT	12	1	13
VA	38	5	43
VI	0	4	4
VT	0	20	20
WA	23	22	45
WI	17	1	18
WV	6	4	10
WY	7	2	9
TOTAL	1126	324	1450

Appendix E

State HIV Prevention Plans

State	Title	Year	Link
Alaska	The 2001-2003 Alaska HIV Prevention Plan	2001	http://www.epi.hss.state.ak.us/programs/aids&stds/hppg/hivprevplan.pdf
California	San Francisco HIV Prevention Plan 2001	2001	http://www.dph.sf.ca.us/HIVPrevPlan/page2.htm
DC	District of Columbia HIV Prevention Three Year Plan 2000 – 2002	2000	http://www.dchealth.com/hiv/reports.htm
Florida	State of Florida 2001-2003 HIV/AIDS Prevention Plan	2001	http://www.doh.state.fl.us/disease_ctrl/aids/compln/commplan.html
Hawaii	Year 2000 Prevention Plan Update for Hawaii	2000	http://mano.icsd.hawaii.gov/doh/resource/comm_dis/std_aids/plan200.pdf
Kentucky	Kentucky HIV Prevention Plan	2001	http://members.aol.com/lexaids/plan2001/plan.htm
Montana	Montana HIV Prevention Comprehensive Plan	2000	http://www.dphhs.state.mt.us/hpsd/pubheal/disease/stdhiv/index.htm
Nevada	Comprehensive HIV Prevention Plan	2001	http://health2k.state.nv.us/hiv/prevention/
Oregon	1999 Oregon HIV Prevention Comprehensive Plan	1999	http://www.ohd.hr.state.or.us/hiv/plan/home.htm

These are states with online prevention plans that specifically describe needs assessment and/or gap analysis.